SOIL SURVEY OF

Florence and Sumter Counties, South Carolina

United States Department of Agriculture
Soil Conservation Service
In cooperation with
South Carolina Agricultural Experiment Station

Issued September 1974

Major fieldwork for this soil survey was done in the period 1959-68. Soil names and descriptions were approved in 1969. Unless otherwise indicated, statements in this publication refer to conditions in the county in 1968. This survey was made cooperatively by the Soil Conservation Service and the South Carolina Agricultural Experiment Station. It is part of the technical assistance furnished to the Florence Soil and Water Conservation District, and Sumter County Soil and Water Conservation District.

Either enlarged or reduced copies of the soil map in this publication can be made by commercial photographers, or they can be purchased on individual order from the Cartographic Division, Soil Conservation Service, USDA, Washington, D.C. 20250.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms, ranches, and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of Florence and Sumter Counties are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the soils of the counties in alphabetic order by map symbol and gives the capability classification of each. It also shows the page where each soil is described and the woodland group in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the discussions of the woodland groups.

Foresters and others can refer to the section "Woodland," where the soils of the county are grouped according to their suitability for trees.

Game managers, sportsmen, and others can find information about soils and wildlife in the section "Use of Soils for Wildlife Habitat."

Community planners and others can read about soil properties that affect the choice of sites for nonindustrial buildings and recreation areas in the section "Town and Country Planning."

Engineers and builders can find, under "Engineering Uses of the Soils," tables that contain test data, estimates of soil properties, and information about soil features that affect engineering practices.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation and Classification of the Soils."

Newcomers in Florence or Sumter Counties may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the information about the counties given at the beginning of the publication and in the section "Additional Facts about Florence and Sumter Counties."

Cover: **Recreation area being developed for Boy Scouts and Girl Scouts. Wagram sand, 0 to 6 percent slopes, is left of pond.**

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BY J. J. PITTS, SOIL CONSERVATION SERVICE

SOILS SURVEYED BY J. J. PITTS, F. L. GREEN, AND T. R. GERALD[1]

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION

FLORENCE AND SUMTER COUNTIES are in the east-central part of South Carolina in the Atlantic Coastal Plain (fig. 1). The total area is approximately 1,495.5 square miles, or 957,123 acres. The total area of Florence County is 805 square miles, or 515,200 acres, and of Sumter County is about 690.5 square miles, or 441,923 acres. Of the Sumter County area, about 18.5 square miles, or 11,843 acres, is water of Lake Marion. Florence and Sumter, the county seats of the two counties, are two of the largest cities in the eastern part of the State. They have both grown rapidly in industry and in population in recent years.

Most of the acreage of the two counties is nearly level to gently sloping, but some areas along streams and drainageways are sloping to moderately steep. Part of the areas of high, reddish soils and of the Sandhills in the western part of Sumter County are rolling and hilly. The soils on flood plains of the rivers and smaller streams are nearly level and are subject to frequent flooding.

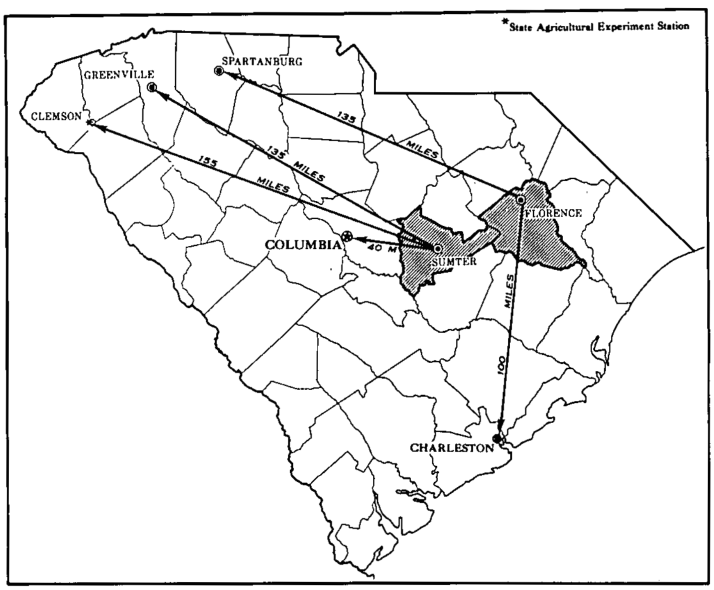

Figure 1.—Location of Florence and Sumter Counties in South Carolina.

[1]Assisting with the fieldwork were J. C. MEETZE, E. C. HERREN, T. A. DUDLEY, and J. H. ALLEN, Soil Conservation Service.

The major soil series in the two counties are Lynchburg, Coxville, Norfolk, Wagram, Goldsboro, Lakeland, Rains, and Duplin. The surface layer of these soils is predominantly loamy sand or sandy loam, but sand is in many places. The soils of more than 70 percent of the area of Florence County and 50 percent of the area of Sumter county have excess water in the profile. Much of this land has been artificially drained with ditches and tile.

About 36 percent of the total land area is used for cultivated crops, 2 percent for pasture, and 53 percent for woodland. Florence County is in the heart of the tobacco belt of South Carolina. The principal crops grown in both counties are tobacco, cotton, corn, soybeans, peanuts, and small grains. There are a few dairy and beef cattle farms. Some peaches are grown for market in Sumter County. Forest products are an important source of income.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Florence and Sumter Counties, where they are located, and how they can be used. The soil scientists went into the counties knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, the kinds of rock, and many facts about soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Norfolk and Lynchburg, for example,

are the names of two soil series. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Orangeburg loamy sand, 2 to 6 percent slopes, is one of several phases within the Orangeburg series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this survey was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series. Three such kinds of mapping units are shown on the soil map of Florence and Sumter Counties: soil complexes, soil associations, and undifferentiated groups.

A soil complex consists of areas of two or more soils, so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area of a complex contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. The name of a soil complex consists of the names of the dominant soils, joined by a hyphen. Cahaba-Leaf complex is an example.

A soil association is made up of adjacent soils that are in areas large enough to be shown individually on the soil map but are shown as one unit because the time and effort of delineating them separately cannot be justified. There is a considerable degree of uniformity in pattern and relative extent of the dominant soils, but the soils may differ greatly one from another. The name of an association consists of the names of the dominant soils, joined by a hyphen. Chastain-Chewacla-Congaree association is an example.

An undifferentiated group is made up of two or more soils that could be delineated individually but are shown as one unit because, for the purpose of the survey, there is little value in separating them. The pattern and proportion of soils are not uniform. An area shown on the map may be made up of only one of the dominant soils, or of two or more. Duplin and Exum soils, 0 to 2 percent slopes, is an undifferentiated soil group in this survey area.

In most areas surveyed, there are places where the soil material is so shallow or so frequently worked by wind and water or man that it cannot be classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names. Mine pits and dumps is a land type in Florence and Sumter Counties.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soil in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil. Yields under defined management are estimated for all the soils.

But only part of a soil survey is finished when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in such a way as to be readily useful to different groups of users, among them farmers, managers of woodland, and engineers.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others, then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

The general soil map at the back of this survey shows, in color, the soil associations in Florence and Sumter Counties. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering works, recreational facilities, and community developments. It is not a suitable map for planning the management of a farm or field, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect their management.

The areas of the General Soil Map of these counties do not precisely join the areas of the maps published in the soil surveys of Darlington and Lee Counties, issued in 1960 and 1963, respectively. Some soil series names have been changed according to the new soil classification system.

The soil associations in Florence and Sumter Counties are described in the following pages. Information about the soils and land types in each association is given in the section "Descriptions of the Soils."

Nearly Level to Strongly Sloping Soils on Ridges and the Upper Part of Slopes

These soil associations form broad stream divides of dominantly well-drained soils. Slopes generally are long and smooth, but a few are short and have sharp breaks, and a few are hummocky. Branching drains occur throughout these associations except in areas dominated by soils that are sandy throughout. Most of these soils have a sandy layer and colors of high chroma.

1. Wagram-Troup-Vaucluse association

Well-drained soils that have a sandy surface layer and a loamy subsoil or have a fragipan in the subsoil

This association consists of high, nearly level or gently sloping soils on ridgetops, moderately sloping to strongly sloping soils on the sides of ridges extending to the drains, and gentle foot slopes paralleling the drains. Many drains and streams originate in this association. Along the western side are steep breaks from the Coastal Plain uplands to the Wateree River terrace. This association is in the northwestern and western part of Sumter County.

The Wagram soils make up about 25 percent of this association; Troup soils, about 22 percent; Vaucluse soils, about 15 percent; and minor soils, the remaining 38 percent. This association occupies about 10 percent of Sumter County.

Wagram and Troup soils are on the higher ridgetops and extend down some of the sides of ridges. Wagram soils have sandy surface and subsurface layers that have a combined thickness of about 26 inches. The subsoil is yellowish-brown sandy clay loam.

Troup soils have sandy surface and subsurface layers that have a combined thickness of about 54 inches. The subsoil is yellowish-brown sandy clay loam.

Vaucluse soils are mostly on the steeper sides of the ridges. They commonly have a dark grayish-brown to dark-gray sandy surface layer and a yellowish-red, compact, brittle sandy clay loam and sandy clay subsoil. The subsoil is highly mottled in the lower part with brown, red, yellow, gray, and purple.

Minor soils in this association are in the Irvington, Lakeland, Orangeburg, Norfolk, Faceville, Greenville, and Osier series.

About 30 percent of the association is cultivated or in pasture. Farms average about 130 acres in size. The rest of the association is in pines or mixed pines and hardwood. Suitability for pines is medium.

Quail habitat development is feasible if the soils are under intensive management. Deer cover is adequate but the natural food supply is low. Controlled burning is not practical, except locally, because of the hazard of soil erosion. There are numerous sites for ponds for fishing and swimming.

2. Lakeland-Kershaw association

Excessively drained soils that are sandy throughout

This association consists of broad areas of nearly level and gently sloping, excessively drained sands. It is in the southwestern part of Sumter County.

Lakeland soils make up about 57 percent of this association; Kershaw soils, about 11 percent; and minor soils, the remaining 32 percent. The association occupies about 7 percent of Sumter County.

Lakeland soils have a surface layer of very dark grayish-brown to brown sand underlain by yellowish-brown sand. Kershaw soils commonly have a grayish-brown sand surface layer underlain by brownish-yellow sand. Minor soils of this association are in the Troup, Wagram, Lucy, Osier, Rutlege, and Rimini series.

Only a small acreage in this association is cultivated. Most of the association is in the Manchester State Forest. Suitability of the soils to pines is low to very low. These soils support a sparse to dense cover of turkey oak, sandhills post oak, and blue jack oak, and lichens such as reindeer moss. In places there are suitable sites for ponds for fishing and swimming.

3. Wagram-Rains-Pocalla association

Well-drained soils that have a sandy surface layer and a loamy subsoil and poorly drained soils that are loamy throughout

This association consists mostly of nearly level and gently sloping soils on broad ridges and nearly level, poorly drained soils in slight depressions and drainageways. It is in the south-central part of Sumter County.

Wagram soils make up about 36 percent of this association; Rains soils, about 14 percent; Pocalla soils, about 13 percent; and minor soils, the remaining 37 percent. The association occupies about 8 percent of Sumter County.

Wagram soils are well drained and slightly droughty. Their surface and subsurface layers are sandy and have a combined thickness of about 26 inches. The subsoil is yellowish-brown sandy clay loam.

Rains soils are nearly level and poorly drained. They are in slight depressions and along drainageways. These soils commonly have a surface layer of very dark gray sandy loam and a subsoil of gray sandy clay loam with yellowish-brown and red mottles.

Pocalla soils are well drained and slightly droughty. They have a surface layer of dark grayish-brown sand. The subsurface layer is about 20 inches of light yellowish-brown sand, and it is underlain by a layer of strong-brown sandy loam. Below the sandy loam is a layer of yellow loamy sand that is underlain by a layer of yellowish-brown, sandy clay loam with coarse mottles.

Minor soils in this association are in the Norfolk, Brogdon, Troup, Rembert, McColl, and Rutlege series.

About half of this association is cultivated, and the other half is wooded or used for nonfarm purposes. Farms average about 180 acres in size and are mostly owner operated. The principal crops are soybeans, cotton, corn, and small grain. Suitability for pines is medium to high on the soils of this association, and large acreages of pines have been planted on Wagram and Pocalla soils.

The soils are suited to development of habitat for quail and other small game, and they provide good fall and winter habitat for doves. Waste left from harvests of corn and soybeans is a good source of food for wildlife. In places suitable pond sites are available where fishing, swimming, and boating facilities can be developed for recreation.

4. Wagram-Lakeland-Norfolk association

Well-drained soils that have a sandy surface layer and a loamy subsoil and excessively drained soils that are sandy throughout

This association consists of broad, nearly level to gently sloping soils on ridges and strongly sloping soils adjacent to the flood plains of the streams. It is in a narrow band along both sides of Jefferies Creek and in the eastern part of Florence county adjoining the flood plains of the Great Pee Dee River.

Wagram soils make up about 35 percent of this association; Lakeland soils, about 25 percent; Norfolk soils, about 10 percent; and minor soils, the remaining 30 percent. The association occupies about 11 percent of Florence County.

The nearly level to gently sloping Wagram and Lakeland soils are on broad ridgetops and on steeper sides of ridges. Wagram soils have sandy surface and subsurface layers that have a combined thickness of about 26 inches. The subsoil is yellowish-brown sandy clay loam.

Lakeland soils have a surface layer of very dark grayish-brown sand underlain by yellowish-brown sand. They are excessively drained.

The nearly level to gently sloping, well-drained Norfolk soils are on ridgetops. They have a surface layer of grayish-brown loamy sand and a subsoil of yellowish-brown sandy clay loam.

Minor soils in this association are in the Orangeburg, Kalmia, Johns, Rains, Pantego, Osier, Rutlege, Wehadkee, and Johnston series.

About half this association is under cultivation or in pasture. The rest is woodland. Farms average about 260 acres in size and are mostly owner operated. The main sources of income are tobacco, cotton, corn, soybeans, and woodland products. Several beef cattle herds are in the association.

The soils of this association except Lakeland soils are well suited to the principal crops grown in the area. Lakeland soils are not well suited because of dryness. Suitability for pines is medium to high.

The soils of this association are suited to most management practices for habitat development for upland wildlife species. A few sites are suitable for fishponds.

5. Faceville-Lenoir-Norfolk association

Well-drained soils that have a sandy surface layer and a clayey or loamy subsoil and somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil

This association consists of broad areas of nearly level, well-drained soils and smaller areas of low-lying, somewhat poorly drained soils. The largest area of this association is in the northwestern part of Sumter County adjacent to the flood plains of the Wateree River. It extends from the Kershaw County line to below Foxville. A smaller area lies south of Pinewood in the southwestern part of the county.

Faceville soils make up about 18 percent of this association; Lenoir soils, about 12 percent; Norfolk soils, about 12 percent; and minor soils, the remaining 58 percent. The association occupies about 7 percent of Sumter County.

Faceville soils are on the highest elevations and are deep and well drained. They commonly have a surface layer of dark grayish-brown loamy sand and a subsoil of yellowish-red sandy clay.

Lenoir soils are somewhat poorly drained and commonly have a surface layer of grayish-brown loam.

Their subsoil is gray, plastic clay containing yellow, brown, and red mottles.

Norfolk soils are deep and well drained. They have a surface layer of grayish-brown loamy sand, and a subsoil of yellowish brown, sandy clay loam.

Minor soils in this association are in the Greenville, Varina, Orangeburg, Duplin, Exum, Goldsboro, Leaf, Rains, Pantego, and Coxville series.

About 60 percent of the association is cultivated or in pasture. The rest is in woodland. Farms range in size from about 140 acres to 200 acres. Principal crops are cotton, corn, soybeans, and small grain. One large dairy farm is operated by the State. Several herds of beef cattle are in areas of this association. The well-drained and moderately well drained soils are well suited to the principal crops grown. The wetter soils are better suited to pasture or woodland. Suitability for pines is medium to high.

In places there are suitable sites for upland duck fields. Some of the soils may be used in combination with soils in adjoining associations for development of deer hunting. Food and cover are well distributed for quail and rabbits. Habitat for doves is good in fall and in winter. Sites for farm pond reservoirs are mainly in the area south of Pinewood.

6. Orangeburg-Lucy-Greenville association

Well-drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil

This association is located on the highest elevations in Sumter County. It consists of broad, nearly level to gently sloping ridges and narrow, sloping to strongly sloping breaks around the head of drains. The drainage pattern is not well developed except around the edges of the association. In some areas intermittent drains disappear completely in low places. The association is in the western part of Sumter County.

Orangeburg soils make up about 25 percent of this association; Lucy soils, about 22 percent; Greenville soils, about 15 percent; and minor soils, the remaining 38 percent. The association occupies about 7 percent of Sumter County. It includes Shaw Air Force Base.

Orangeburg soils commonly have a surface layer of grayish-brown loamy sand, and a subsoil of thick, red sandy clay loam.

Lucy soils have brownish sand surface and subsurface layers that have a combined thickness of about 28 inches. The subsoil is yellowish-red sandy clay loam.

Greenville soils are on the highest elevations in the association. They have a surface layer of dark-brown loamy sand or sandy loam, and a thick subsoil of dark-red sandy clay.

Minor soils in this association are in the Red Bay, Lakeland, Troup, Wagram, Faceville, Vaucluse, and Osier series.

About 65 percent of this association is in cultivated crops or pasture, 25 percent is in pines and upland hardwood, and 10 percent is used for nonfarm purposes. Farms average about 300 acres in size and are mostly owner operated. The principal crops are cotton, corn, soybeans, small grain, and peanuts. There is one large peach-growing operation and several dairy farms. Many of the farms have herds of beef cattle.

The soils of this association generally are well suited to the principal crops grown in the association and include some of the most productive soils in the county. Soil blowing is a hazard in the large fields, and water erosion is a hazard on the gently sloping to strongly sloping soils. Suitability of these soils for pines is medium to high.

These soils are well suited to food plantings for wildlife. Cropland uses generally are given first priority.

7. Norfolk-Orangeburg-Rutlege association

Well-drained soils that have a sandy surface layer and a loamy subsoil and very poorly drained soils that are sandy throughout

This association consists of areas of nearly level to gently sloping soils on broad ridges, and narrow areas of gently sloping to strongly sloping soils on sides of ridges that parallel drains and streams. Fairly wide areas of nearly level, very poorly drained soils are along the small streams.

Many oval-shaped depressions, locally known as "Carolina Bays," are from a few feet to about 30 feet lower than the surrounding uplands. This association is in Sumter County, north of the city of Sumter.

Norfolk soils make up about 27 percent of this association; Orangeburg soils, about 14 percent; Rutlege soils,

about 12 percent; and minor soils, the remaining 47 percent. The association occupies about 13 percent of Sumter county.

Norfolk and Orangeburg soils are deep and well drained; they occupy the broad ridges and extend down the sides of ridges leading to the drains and depressions. Norfolk soils have a surface layer of grayish-brown loamy sand and a subsoil of yellowish-brown sandy clay loam.

Orangeburg soils commonly have a surface layer of loamy sand, and a thick subsoil of red sandy clay loam.

Rutlege soils are very poorly drained and have a surface layer about 12 inches thick of black loamy sand over grayish sand.

Minor soils in this association are in the Troup, Wagram, Lucy, Goldsboro, Lynchburg, Coxville, Rembert, and McColl series.

About 60 percent of this association is cultivated or in pasture. The rest is wooded or used for nonfarm purposes. The average farm contains about 240 acres and is mostly owner operated. The main crops are cotton, corn, soybeans, and small grain. Most of the soils of this association are well suited to the main crops grown in this association. Water erosion is a hazard on the sloping fields. The Rutlege soils are not well suited to cultivated crops. They are better suited to trees or permanent pasture. Suitability for pines is medium to high on the soils of this association.

Numerous pond sites for fishing and swimming are available. Below many of these pond sites are sites for upland duck fields. On the better drained areas of this association, excellent quail and dove habitat can be developed. Crop waste left after harvest is a good source of food for doves.

Dominantly Nearly Level Soils on the Lower Part of Slopes and on Flats

These soil associations form broad low flats and low-lying areas. Most soils have restricted drainage. Slopes are dominantly less than 1 percent. Drainage patterns are poorly defined and some areas are ponded. These soils generally have a sandy or loamy surface layer and subsoil dominated by low-chroma colors and that contain many low-chroma mottles.

8. Coxville-Norfolk-Lynchburg association

Poorly drained soils that have a loamy surface layer and a clayey subsoil, well-drained soils that have a sandy surface layer and a loamy subsoil, and somewhat poorly drained soils that are loamy throughout

This association consists of nearly level to gently sloping, well-drained soils on broad ridges, and somewhat poorly drained to poorly drained soils on broad, flat areas and depressions on lower elevations. It is dissected by many small streams, some of which originate within its boundaries. The higher ridges are adjacent and parallel to the drains and small streams. Away from the drains, the topography slopes down to depressions which are about midway between the drains. Toward the drains, the ridges have narrow, sloping sides parallel to the flood plains of the small streams. Areas of poorly drained to very poorly drained soils along the small streams vary in width from a few hundred feet to nearly a half mile. This association is in the eastern and south-central parts of Sumter County and mostly is in the northern section of Florence County.

Coxville soils make up about 21 percent of this association; Norfolk soils, about 16 percent; Lynchburg soils, about 14 percent; and minor soils, the remaining 49 percent. The association occupies about 22 percent of Sumter County and about 38 percent of Florence County. The city of Florence is included.

Coxville soils are poorly drained and are in low areas farthest from the drains. They commonly have a surface layer of very dark gray fine sandy loam and a subsoil of gray sandy clay mottled with yellow, brown, and red.

The well-drained Norfolk soils in places are on the broad, highest ridges adjoining the slopes that parallel the streams. They have a surface layer of grayish-brown loamy sand, and a subsoil of yellowish-brown sandy clay loam.

Lynchburg soils are somewhat poorly drained and are at intermediate elevations. They have a surface layer of very dark gray sandy loam and a subsoil of sandy clay loam mottled with shades of gray, brown, yellow, and occasionally red.

Minor soils in this association are in the Wagram, Lakeland, Orangeburg, Faceville, Varina, Sunsweet, Goldsboro, Duplin, Exum, Rains, Pantego, Rutlege, Wehadkee, and Johnston series.

About 60 percent of this association is cultivated or in pasture. The rest is wooded or is used for nonfarm purposes. Farms are mostly owner operated; they range from 135 to 220 acres in size. Farms are mostly of the general type, though several are dairy and beef cattle farms. The principal crops are cotton, tobacco, corn, soybeans, and small grain. Soils of this association are mostly well suited to row crops. The soils that are not well drained require simple to intensive drainage practices. Suitability for pines is medium to high.

The soils of this association are suited to development of habitat for quail and other small game. Cover is adequate, and there is a moderate amount of natural food. Artificial drainage is needed on some soils to establish perennial wildlife foods, such as bicolor lespedeza for quail. Some soils in this association can be used with soils of adjacent associations to establish good habitat for deer. Suitable pond sites are available where fishing, swimming, and boating enterprises can be developed.

9. Ponzer-Rutlege association

Very poorly drained soils that have a mucky surface layer and loamy underlying layers or that are sandy throughout

This association consists of several oval-shaped "Carolina Bays" in Sumter County.

Ponzer soils make up about 64 percent of this association; Rutlege soils, about 26 percent; and minor soils, the remaining 10 percent. The association occupies a little more than 1 percent of Sumter County.

Ponzer and Rutlege soils are very poorly drained. Ponzer soils have about 22 inches of very dark brown decomposed organic material underlain by loamy material. Rutlege soils have about 12 inches of black loamy sand over grayish sand. Minor soils in this association are in the Chipley, Rimini, and Osier series.

All of this association is wooded. Trees are mostly bottom-land hardwoods. Water management is needed for production of pine.

The large tracts of trees provide favorable habitat for deer. The squirrel population in this association is fairly large. Other small game species are not numerous because the wetness of the area is unfavorable.

10. Lynchburg-Goldsboro-Coxville association

Somewhat poorly drained and moderately well drained soils that have a loamy or sandy surface layer and a loamy subsoil and poorly drained soils that have a loamy surface layer and a clayey subsoil

This association consists of broad, nearly level areas and depressions where major drainage is poorly developed. The elevations over the entire association vary only a few feet. The higher elevations parallel the few drainageways and slope gently from the drains. The association is in two areas in the eastern part of Sumter County and in large areas in the southern and central part of Florence County.

Lynchburg soils make up about 33 percent of this association; Goldsboro soils, about 20 percent; Coxville soils, about 17 percent; and minor soils, the remaining 30 percent. The association occupies 8 percent of Sumter County and 31 percent of Florence County.

Lynchburg soils are somewhat poorly drained. They are on intermediate drainage positions between Goldsboro and Coxville soils. Lynchburg soils have a surface layer of very dark gray sandy loam and a thick subsoil of sandy clay loam mottled with shades of gray, brown, yellow, and occasionally red.

Goldsboro soils are moderately well drained and are on the highest elevations. They have a surface layer of dark-gray sand and a subsoil of yellowish-brown sandy clay loam mottled with gray in the lower part.

Coxville soils are poorly drained and are on broad, flat areas and in slight depressions and oval-shaped bays. They commonly have a surface layer of very dark gray fine sandy loam and a subsoil of gray sandy clay mottled with yellow, brown, and red.

Minor soils in this association are in the Norfolk, Duplin, Olanta, Barth, Rains, and Pantego series.

About 40 percent of this association is cultivated. The rest is in woodland. Only a small amount of the open land is in pasture. Several large wooded tracts are owned by corporations or individuals engaged in processing woodland products.The average farm size is 120 to 150 acres and the farms are mostly owner operated. The main sources of income are tobacco, cotton, corn, soybeans, and woodland products. Some truck crops are grown in the Lake City area. The soils of this association are productive if drained and properly managed. Suitability for pines is medium to high. Poorly drained sites are suited to hardwoods.

The better drained soils are well suited to the development of quail habitat. Cover is well distributed and there is a moderate amount of natural food. Bicolor lespedeza and annual wildlife food crops are needed to supplement natural food. Only a few sites are available for embankment ponds or lakes. Excavated ponds as a source of irrigation water are numerous. If managed properly, some of these are suitable for fishing.

11. Olanta-Chipley association

Moderately well drained soils that have a sandy surface layer and a loamy subsoil and moderately well drained to somewhat poorly drained soils that are sandy throughout

This association consists of broad, nearly level areas in the southeastern part of Florence County near the town of Johnsonville. The natural drainage pattern is poorly developed.

Olanta soils make up about 35 percent of this association; Chipley soils, about 35 percent; and minor soils, the remaining 30 percent. The association occupies a little more than 1 percent of Florence County.

The moderately well drained Olanta soils are on some of the better drained positions. They have a surface layer of very dark grayish-brown loamy sand and a subsoil of yellowish-brown sandy loam.

The Chipley soils are on slightly lower elevations and are moderately well drained to somewhat poorly drained. They have a surface layer of black loamy sand underlain by yellowish-brown and pale-brown loamy sand and sand mottled with gray. The mottles increase in number and size with depth.

Minor soils in this association are in the Lakeland, Goldsboro, Barth, Lynchburg, Pantego, and Rutlege series.

About 50 percent of this association is cultivated. The rest is wooded. Most of the farms are owner operated and average about 110 acres in size. The principal crops are tobacco, corn, cotton, soybeans, and small grain. If drained, the soils of this association are well suited to these crops. Suitability for pines is medium to high.

Some of the better drained soils are suited to the management of habitat for quail. Cover is ample, but food is limited, especially late in winter and early in spring. Strips of bicolor lespedeza planted on the well-drained or artificially drained soils can furnish choice food for the winter and spring seasons.

12. Leaf-Cahaba-Johns association

Poorly drained soils that have a loamy surface layer and a clayey subsoil, well-drained soils that have a sandy surface layer and a loamy subsoil, and moderately well drained soils that are loamy throughout

This association consists of long, narrow, low ridges and narrow depressions on stream terraces adjacent to the flood plains of the Lynches River and the Great Pee Dee River. The soils in this association formed in material washed from the Coastal Plain and the Piedmont.

Leaf soils make up about 33 percent of this association; Cahaba soils, about 15 percent; Johns soils, about 14 percent; and minor soils, the remaining 38 percent. The association occupies about 8 percent of Florence County and less than 1 percent of Sumter County.

Leaf soils are in the depressions and at lower elevations. These poorly drained soils commonly have a surface layer of very dark gray fine sandy loam and a gray subsoil of plastic clay generally mottled with yellow, brown, and red.

Cahaba soils are well drained. They are on the highest of the low ridges. Cahaba soils commonly have a surface layer of grayish-brown loamy fine sand and a subsoil ofyellowish-red sandy clay loam.

The moderately well drained Johns soils are at intermediate elevations. They have a surface layer of dark grayish-brown fine sandy loam and a subsoil of yellowish-brown sandy clay loam mottled with gray.

Minor soils in this association are in the Wahee, Kalmia, Lakeland, Kenansville, Duplin, Rains, Pantego, and Cape Fear series.

About 25 percent of this association is cultivated or in pasture, and the rest is in woodland. Large wooded tracts are owned by corporations or individuals engaged in processing woodland products. The farms are mostly owner operated and average about 130 acres in size. The main cash crops are tobacco, cotton, corn, soybeans, and woodland products. The soils of this association are mostly well suited

to these crops. The wetter soils are less suited. Suitability for pines and bottom-land hardwoods is medium to high.

Large tracts of woodland, particularly those adjoining the Great Pee Dee River flood plains, are good habitat for deer. Some of these areas are leased by hunting clubs.

Nearly Level Soils on Flood Plains

These soil associations are on narrow to medium flood plains of large creeks and rivers. Most soils are poorly or very poorly drained. Drainage patterns are very poorly defined. These soils are frequently flooded, and some have water over the surface most of the time. Most of these soils have loamy surface layers and are dominated by low-chroma colors below the surface layer.

13. Chastain-Chewacla association

Poorly drained soils that have a loamy surface layer and a clayey subsoil and somewhat poorly drained soils that are loamy throughout.

This association consists of flood plains along the Wateree and Lynches Rivers in Sumter County and the Great Pee Dee and Lynches Rivers in Florence County. It consists of low, narrow ridges and depressions that generally parallel the rivers. There are several oxbow lakes and old stream channels that are filled with water. The soils of this association formed in recent alluvium washed from the Piedmont and Coastal Plain. They are flooded frequently. Many areas have standing water 6 inches to several feet deep for several months each year.

Chastain and Chewacla soils were mapped in undifferentiated groups which occupy about 75 percent of this association. Minor soils make up the remaining 25 percent. The association occupies about 13 percent of Sumter County and about 5 percent of Florence County.

The poorly drained Chastain soils are on the depressions and flats between the ridges. They have a surface layer of grayish-brown silty clay loam and a subsoil of gray clay and clay loam with yellow and brown mottles.

Chewacla soils are on the low ridges and are somewhat poorly drained. They have a surface layer of brown silty clay loam and a subsoil of yellowish-brown silty clay loam mottled with gray.

Minor soils in this association are in the Congaree, Wehadkee, Wahee, Leaf, Cape Fear, Pantego, Rains, Osier, Rutlege, and Lakeland series

The soils in this association are not used for cultivated crops. In Sumter County a small acreage is in permanent pasture. The association is mostly in hardwoods. Some of the acreage is owned by general farmer operators, but several large tracts are owned by commercial users of woodland products. Woodland products are used for pulpwood, sawtimber, and veneer.

The soils are well suited as habitat for deer. Much of the acreage is leased by hunting clubs. Sites for woodland duckponds are numerous, but water-control measures are needed. The rivers and lakes are used for boating and fishing.

14. Swamp association

Very poorly drained areas of swamp

These soils are too inaccessible for orderly study or classification. The entire association is permanently covered with water a few inches to several feet deep. Many shallow, indefinite stream channels, oxbows, and open lakes which appear to have been old channels are in this association. The association occupies about 3 percent of Sumter County.

Almost all of the original hardwood timber has been cut, and now only scrub hardwoods, grasses that tolerate water, shrubs, and vines grow on the soils of this association.

The soils of this miscellaneous land type have severe limitations for most uses.

15. Wehadkee-Johnston association

Poorly drained and very poorly drained soils that are dominantly loamy throughout

This association consists of soils on flood plains of small streams in Florence County. These streams are Black Creek, Jefferies Creek, Sparrow Swamp, Big Swamp, Lynches Lake, and some of the smaller tributaries of these streams. These soils formed in sandy alluvium washed from the surrounding Coastal Plain.

The Wehadkee soils make up about 35 percent of the association; Johnston soils, about 25 percent; and minor soils, 40 percent. The association occupies about 6 percent of Florence County.

Wehadkee soils commonly have a surface layer of brownish-gray fine sandy loam and a subsoil of gray sandy loam and sandy clay loam with brown mottles.

Johnston soils have a thick surface layer of very dark gray loam high in organic-matter content and underlain by layers of gray sandy material.

Minor soils in this association are in Rutlege, Pantego, Osier, Rains, Leaf, Johns, Barth, and Lakeland series.

This association is mostly wooded, and the farms are mostly owner operated and extend into adjoining associations. The soils generally are not suitable for cultivated crops. Woodland products are used for pulpwood, sawtimber, and veneer. Pines are suited to areas where water does not stand for long periods. Hardwoods on bottom lands are well suited to most of these soils.

Rabbits and squirrels are fairly plentiful in this association. The larger wooded tracts provide favorable habitat for deer. Sites for wooded duckponds are numerous, but water-control measures are needed for their management. Fish are plentiful in some of the streams.

Descriptions of the Soils

In this section the soils of Florence and Sumter Counties are described in detail, and their use and management are discussed. Each soil series is described in detail, and then, briefly, the mapping units in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit, it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the profile, that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familiar to the layman. The second is much more detailed and is for those who need to make thorough and precise studies of soils. The profile described in the soil series is representative for mapping units in that series. If a given mapping unit has a profile in some ways different from

the one described in the series, these differences are stated in the description of the mapping unit, or they are apparent in the name of the mapping unit. The description of each mapping unit contains suggestions on how the soil can be managed.

As mentioned in the section "How This Survey Was Made", not all mapping units are members of a soil series. Mine pits and dumps, for example, does not belong to a soil series, but nevertheless is listed in alphabetic order along with the soil series.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit is the capability unit and woodland group in which the mapping unit has been placed. The page for the description of each capability unit or woodland suitability group can be learned by referring to the "Guide to Mapping Units" at the back of this survey.

The acreage and proportionate extent of each mapping unit are shown in table 1. Many of the terms used in describing soils can be found in the Glossary, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual (*8*).[2]

[2] Italic numbers in parentheses refer to Literature Cited, p. 110.

TABLE 1.—*Approximate acreage and proportionate extent of soils mapped*

Soil	Florence County		Sumter County		Total
	Acres	Percent	Acres	Percent	Acres
Barth loamy sand	2,842	0.6	719	0.2	3,561
Brogdon sand	1,080	.2	1,741	.4	2,821
Cahaba loamy fine sand, 0 to 3 percent slopes	5,914	1.1	149	(1/)	6,063
Cahaba-Leaf complex	3,846	.7	-----	----	3,846
Cape Fear loam	975	.2	-----	----	975
Chastain soils, frequently flooded	-----	----	23,575	5.3	23,575
Chastain-Chewacla association, frequently flooded	-----	----	6,399	1.4	6,399
Chastain-Chewacla-Congaree association, frequently flooded	18,428	3.6	-----	----	18,428
Chewacla soils, frequently flooded	-----	----	10,004	2.3	10,004
Chipley loamy sand, dark surface	4,122	.8	-----	----	4,122
Congaree loam	-----	----	3,331	.8	3,331
Coxville fine sandy loam	70,685	13.7	36,395	8.2	107,080
Duplin fine sandy loam	20,546	4.0	8,122	1.8	28,668
Duplin and Exum soils, 0 to 2 percent slopes	3,231	.6	2,198	.5	5,429
Duplin and Exum soils, 2 to 6 percent slopes	978	.2	-----	----	978
Exum sandy loam	1,154	.2	1,177	.3	2,331
Faceville loamy sand, 0 to 2 percent slopes	375	.1	4,963	1.1	5,338
Faceville loamy sand, 2 to 6 percent slopes	248	(1/)	3,519	.8	3,767
Faceville loamy sand, 6 to 15 percent slopes	50	(1/)	1,896	.4	1,946
Fuquay sand, 0 to 4 percent slopes	2,360	.5	-----	----	2,360
Goldsboro loamy sand	45,827	8.9	14,971	3.4	60,798
Goldsboro loamy sand, moderately deep variant	-----	----	1,729	.4	1,729
Greenville loamy sand, 0 to 2 percent slopes	-----	----	2,010	.5	2,010
Greenville loamy sand, 2 to 6 percent slopes	-----	----	2,086	.5	2,086
Greenville loamy sand, 6 to 10 percent slopes	-----	----	1,732	.4	1,732
Greenville sandy loam, 0 to 2 percent slopes	-----	----	909	.2	909
Greenville sandy loam, 2 to 6 percent slopes	-----	----	806	.2	806
Hyde loam	371	.1	325	.1	696
Irvington loamy sand, 0 to 2 percent slopes	-----	----	244	.1	244
Irvington loamy sand, 2 to 6 percent slopes	-----	----	2,996	.7	2,996
Irvington loamy sand, 6 to 10 percent slopes	-----	----	2,080	.5	2,080
Irvington loamy sand, 6 to 10 percent slopes, eroded	-----	----	636	.1	636
Johns fine sandy loam	6,761	1.3	1,129	.3	7,890
Kalmia loamy sand	1,841	.4	603	.1	2,444
Kenansville sand, 0 to 4 percent slopes	1,601	.3	-----	----	1,601

TABLE 1.—*Approximate acreage and proportionate extent of soils mapped*—Continued

Soil	Florence County		Sumter County		Total
	Acres	Percent	Acres	Percent	Acres
Kershaw sand, 0 to 15 percent slopes	-----	----	3,509	.8	3,509
Lakeland sand, 0 to 6 percent slopes	22,153	4.3	20,696	4.7	42,849
Lakeland sand, 6 to 15 percent slopes	4,031	.8	113	(1/)	4,144
Leaf fine sandy loam	16,326	3.2	3,601	.8	19,927
Lenoir loam	------	----	4,901	1.1	4,901
Lucy sand, 0 to 6 percent slopes	1,560	.3	10,190	2.3	11,750
Lucy sand, 6 to 10 percent slopes	155	(1/)	2,711	.6	2,866
Lynchburg sandy loam	78,019	15.1	32,457	7.3	110,476
Lynn Haven sand	431	.1	------	----	431
Made land	------	----	290	.1	290
McColl fine sandy loam	------	----	1,808	.4	1,808
Mine pits and dumps	426	.1	1,288	.3	1,714
Norfolk loamy sand, 0 to 2 percent slopes	34,803	6.7	34,349	7.8	69,152
Norfolk loamy sand, 2 to 6 percent slopes	6,880	1.3	6,645	1.5	13,525
Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes	------	----	826	.2	826
Olanta loamy sand	4,019	.8	------	----	4,019
Orangeburg loamy sand, 0 to 2 percent slopes	3,302	.6	6,597	1.5	9,899
Orangeburg loamy sand, 2 to 6 percent slopes	1,522	.3	7,259	1.6	8,781
Orangeburg loamy sand, 6 to 10 percent slopes	125	(1/)	2,167	.5	2,292
Orangeburg loamy sand, 10 to 15 percent slopes	------	----	588	.1	588
Osier loamy sand	6,470	1.3	9,564	2.2	16,034
Pantego loam	12,461	2.4	10,736	2.4	23,197
Pocalla sand, 0 to 4 percent slopes	1,419	.3	4,757	1.1	6,176
Ponzer soils	------	----	3,373	.8	3,373
Rains sandy loam	20,823	4.0	10,914	2.5	31,737
Rains sandy loam, moderately deep variant	------	----	385	.1	385
Red Bay sandy loam, 0 to 2 percent slopes	------	----	2,677	.6	2,677
Red Bay sandy loam, 2 to 6 percent slopes	------	----	1,014	.2	1,014
Rembert loam	------	----	3,926	.9	3,926
Rimini sand	185	(1/)	446	.1	631
Rutlege loamy sand	7,426	1.4	20,476	4.6	27,902
Sunsweet loamy fine sand, 6 to 10 percent slopes	1,314	.3	314	.1	1,628
Sunsweet loamy fine sand, 10 to 25 percent slopes	1,565	.3	------	----	1,565
Swamp	------	----	12,692	2.9	12,692
Troup sand, 0 to 6 percent slopes	------	----	13,722	3.1	13,722
Troup sand, 6 to 15 percent slopes	------	----	6,245	1.4	6,245
Varina loamy fine sand, 0 to 2 percent slopes	1,480	.3	5,307	1.2	6,787
Varina loamy fine sand, 2 to 6 percent slopes	3,951	.8	1,548	.3	5,499

TABLE 1.—*Approximate acreage and proportionate extent of soils mapped*—Continued

Soil	Florence County		Sumter County		Total
	Acres	Percent	Acres	Percent	Acres
Vaucluse loamy sand, 2 to 6 percent slopes	------	-----	1,046	.2	1,046
Vaucluse loamy sand, 6 to 10 percent slopes	------	-----	1,955	.4	1,955
Vaucluse loamy sand, 10 to 15 percent slopes	------	-----	4,580	1.0	4,580
Vaucluse sandy loam, 3 to 8 percent slopes, eroded	------	-----	392	.1	392
Wagram sand, 0 to 6 percent slopes	29,636	5.8	28,235	6.4	57,871
Wagram sand, 6 to 10 percent slopes	2,996	.6	2,188	.5	5,184
Wagram sand, 10 to 15 percent slopes	1,204	.2	860	.2	2,064
Wahee fine sandy loam	5,592	1.1	-----	----	5,592
Wehadkee-Chastain association, frequently flooded	11,396	2.2	840	.2	12,236
Wehadkee and Johnston soils, frequently flooded	32,279	6.3	-----	----	32,279
Unmapped Urban Areas or Military installations	4,962	1.0	3,008	.7	7,970
Water	3,054	.6	14,284	3.2	17,338
Total	515,200	100.0	441,923	100.0	957,123

1/ Less than 0.05 percent.

Barth Series

The soils of the Barth series are nearly level and moderately well drained. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is very dark grayish-brown loamy sand about 8 inches thick. Below this is a layer of very friable loamy sand about 26 inches thick. It is dark yellowish brown in the upper 6 inches and yellowish brown in the next 20 inches. The underlying material is mottled yellowish-brown sand in the upper 10 inches and light-gray sand at a depth below about 44 inches.

Barth soils are low in content of organic matter. Permeability is moderately rapid to rapid, but an occasional high water table impedes permeability. Available water capacity is low.

Representative profile of Barth loamy sand in a cultivated field in Florence County, about 2 miles east of Lake City and 300 feet south of State Highway 85 near Cameron Church:

Ap—0 to 8 inches, very dark grayish-brown (10YR 3/2) loamy sand; weak, medium, granular structure; very friable; common fine roots; medium acid (pH 6.0); abrupt, smooth boundary.

B1—8 to 14 inches, dark yellowish-brown (10YR 4/4) loamy sand; weak, medium, granular structure; very friable; some Ap horizon material in root channels and insect holes; strongly acid (pH 5.5); gradual, wavy boundary.

B2t—14 to 34 inches, yellowish-brown (10YR 5/6) loamy sand that has pockets of sandy loam; weak, medium, granular structure; very friable; sand grains coated and bridged; very strongly acid (pH 4.7); gradual, wavy boundary.

C1—34 to 44 inches, yellowish-brown (10YR 5/6) sand; many, medium, distinct, strong-brown (7.5 YR 5/6) and pale-brown (10YR 6/3) mottles, and few, fine, light-gray mottles; single grained; loose; strongly acid (pH 5.4); gradual, wavy boundary.

C2—44 to 60 inches, light-gray (10YR 7/1) sand; single grained; loose; strongly acid (pH 5.4).

The solum commonly ranges from 30 to 45 inches in thickness. Depth to the water table ranges from 18 to 30 inches during wet seasons. In the A horizon reaction is medium acid or strongly acid. The Ap or A1 horizon is 7 to 9 inches thick and is very dark grayish brown, dark grayish brown, or very dark gray.

In the B horizon reaction is strongly acid or very strongly acid. In places the B1 horizon is light yellowish-brown, yellowish-brown, or dark yellowish-brown loamy sand 2 to 7 inches thick. The B2t horizon is yellowish-brown, light yellowish-brown, or pale-brown loamy sand or loamy fine sand 15 to 30 inches thick with pockets of sandy loam. In the lower part of the B2t horizon are mottles of strong brown, pale brown, or gray. The Bt horizons are slightly thinner than the defined range for the series.

The C horizon is at a depth of 30 to 45 inches. The upper part commonly is mottled with strong brown, yellowish brown, pale brown, gray, and light gray. Below a depth of 40 to 45 inches, the matrix color generally is gray to light gray.

Barth soils are associated with Lakeland, Chipley, Olanta, Johns, Goldsboro, and Lynchburg soils. There is a slight increase in clay content from the surface layer to the subsoil in Barth soils, but in Lakeland and Chipley soils there is no appreciable increase. Barth soils have a sandier subsoil than Olanta, Johns, Goldsboro, or Lynchburg soils.

Barth loamy sand (Ba).—This is the only Barth soil mapped in the survey area. Included in mapping are a few areas of Olanta, Chipley, and Lakeland soils. Also included are a few areas of wet soils of the Osier, Rutlege, Rains, and Pantego series. These wet areas are less than 4 acres in size. They are shown on the map by wet spot symbols.

This Barth soil is easy to till. Crops respond well to fertilizer and lime. Most of the acreage is cultivated, and most of the uncultivated acreage is wooded. A few areas are used

for pasture. Principal crops are corn, soybeans, cotton, tobacco, and pasture grasses. Capability unit IIIw-1; woodland group 3w2.

Brogdon Series

The soils of the Brogdon series are nearly level, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown sand about 8 inches thick, and the subsurface layer is pale-brown loamy sand about 7 inches thick. The next layer is yellowish-brown sandy loam about 14 inches thick over 7 inches of yellowish-brown loamy sand. Below this is brownish-yellow sand and loamy sand about 12 inches thick. The next layer extends to a depth of more than 78 inches. The upper 12 inches is dominantly yellowish-brown sandy loam, and the lower part mottled sandy clay loam.

Brogdon soils are low in content of organic matter. Permeability is moderate to moderately rapid, and surface runoff is slow to medium. Available water capacity is medium to low.

Representative profile of nearly level Brogdon sand in cultivated field in Florence County, 0.7 mile north of Coward and 500 feet east of St. Paul Church:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) sand; weak, medium, granular structure; very friable; common fine roots; medium acid (pH 6.0); abrupt, smooth boundary.

A2—8 to 15 inches, pale-brown (10YR 6/3) loamy sand; weak, medium, granular structure; very friable; few fine roots; some Ap material in holes and in old root channels; few dark-brown lamellae; strongly acid (pH 5.4); clear, wavy boundary.

B2t—15 to 29 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged; common fine and medium pores; few, fine, slightly firm, brown to strong-brown incipient concretions; very strongly acid (pH 5.0); gradual, wavy boundary.

B3—29 to 36 inches, yellowish-brown (10YR 5/6) loamy sand; very weak, coarse, subangular blocky structure; very friable; common fine and medium pores; some clean sand grains, mostly coated; strongly acid (pH 5.1); clear, smooth boundary.

B3 and A'2—36 to 48 inches, brownish-yellow (10YR 6/6) sand and loamy sand; common streaks of clean, light-gray (10YR 7/1) sand grains and a few bodies of sandy loam; A'2 part single grained, B3 part very weak, subangular blocky structure; loose to very friable; B3 part coated and bridged; strongly acid (pH 5.1); gradual, wavy boundary.

B'21t—48 to 60 inches, yellowish-brown (10YR 5/8) sandy loam; a few, medium, prominent, yellowish-red (5YR 5/6) and red (2/5YR 4/6) mottles; weak, medium, subangular blocky structure; friable; patchy, faint clay films on surfaces of peds; few plinthite nodules (less than 5 percent); strongly acid (pH 5.3); gradual, wavy boundary.

B'22t—60 to 72 inches, mottled yellowish-brown, strong-brown, yellowish-red, pale-brown, and gray sandy clay loam; weak, medium, subangular blocky structure; friable; patchy, faint clay films on surfaces of peds; 7 to 10 percent plinthite nodules; strongly acid (pH 5.2); clear, smooth boundary.

B'23t—72 to 78 inches, mottled yellowish-brown, gray, red, and yellowish-red, pale-brown, and gray sandy clay loam; weak, medium, subangular blocky structure; friable; patchy, faint clay films on surfaces of peds; 7 to 10 percent plinthite nodules; strongly acid (pH 5.2); clear, smooth boundary.

The solum is commonly more than 65 inches thick, and the A horizon ranges from 11 to 19 inches in thickness. In the A horizon reaction is medium acid or strongly acid. The Ap horizon is 5 to 8 inches thick and is dark grayish brown, grayish brown, or brown. The A2 horizon is 4 to 13 inches of pale-brown, light yellowish-brown, very pale brown, or pale-yellow sand, loamy sand, or loamy fine sand.

In the B horizon reaction is strongly acid or very strongly acid. The B2t horizon is 6 to 25 inches of yellowish-brown or strong-brown sandy loam or sandy clay loam. The B3 horizon is 5 to 13 inches of yellowish-brown or strong-brown loamy sand or sandy loam. The B3 and A'2 horizon is at a depth of 26 to 40 inches. This horizon is commonly 10 to 24 inches thick. The B'2t horizon is sandy loam, sandy clay loam, or sandy clay, and it ranges in thickness from about 15 inches to more than 30 inches. Plinthite is commonly at a depth below 60 inches in this horizon. Some profiles contain 2 to 4 percent plinthite nodules at a depth of less than 60 inches.

Brogdon soils are associated with Norfolk, Goldsboro, Wagram, Pocalla, and Fuquay soils. Their subsoil is coarser textured in the upper part than the subsoil in Norfolk and Goldsboro soils. Brogdon soils have thinner surface and subsurface layers than Wagram, Pocalla, and Fuquay soils.

Brogdon sand (Br).—Included with this soil in mapping are a few areas of Norfolk, Wagram, Fuquay, Pocalla, and Goldsboro soils; a few soils redder than the defined color; and a few areas of soils that have more than 5 percent plinthite at a depth of between 50 to 60 inches. Also included are a few areas of wetter soils that are less than 4 acres in size. These are shown on the map by wet spot symbols. A few areas that have a loamy sand surface layer are also included.

This soil is easily tilled throughout a wide range of moisture content. It is slightly droughty during periods of low rainfall. Crops respond well to fertilzer and lime. Most of this soil is in row crops. Capability unit IIs-1; woodland group 2o1.

Cahaba Series

The soils of the Cahaba series are nearly level and gently sloping and are well drained. They formed in loamy Coastal Plain sediment, and they are moderately deep and deep to coarse sand.

In a representative profile the surface layer is grayish-brown loamy fine sand about 6 inches thick. The subsurface layer is pale-brown fine sandy loam about 3 inches thick. The next layer is about 33 inches thick. It is strong-brown fine sandy loam in the upper 2 inches; yellowish-red, friable sandy clay loam in the next 15 inches; and reddish-yellow fine sandy loam in the lower 16 inches. The underlying material is brownish-yellow coarse sand.

Cahaba soils are low in content of organic matter. Permeability is moderate, and runoff is slow to medium. Available water capacity is medium.

Representative profile of nearly level Cahaba soil in an area of the Cahaba-Leaf complex in a cultivated field in Florence County, one-half mile south of Elim; 2,400 feet south of intersection of U.S. Highway 301 and State Highway 490; and 150 feet east of State Highway 490:

Ap—0 to 6 inches, grayish-brown (10YR 5/2) loamy fine sand; weak, fine, granular structure; very friable; common fine roots; strongly acid (pH 5.3); abrupt; smooth boundary.

A2—6 to 9 inches, pale-brown (10YR 6/3) fine sandy loam; weak, fine, granular structure; very friable; few fine roots; strongly acid (pH 5.4); abrupt, smooth boundary.

B1—9 to 11 inches, strong-brown (7.5YR 5/6) fine sandy loam; weak, medium, subangular blocky structure; friable few fine roots; common fine pores; very strongly acid (pH 5.0); clear, smooth boundary.

B2t—11 to 26 inches, yellowish-red (5YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on surfaces of peds; few fine roots; common fine and medium pores; common fine mica flakes; many old worm holes 1/4 to 1/2 inch in diameter that have been filled with soil material of the same color and texture as surrounding soil material; very strongly acid (pH 4.9); gradual, wavy boundary.

B3—26 to 42 inches, reddish-yellow (5YR 6/6) fine sandy loam; weak, medium, subangular blocky structure; very friable; common fine pores; common fine mica flakes; strongly acid (pH 5.1); clear, wavy boundary.

IIC—42 to 63 inches, brownish-yellow (10YR 6/6) coarse sand; common, coarse, uncoated grains of sand; single grained; loose; strongly acid (pH 5.5).

The solum is less than 45 inches thick. Reaction is strongly acid to very strongly acid throughout the profile. The A horizon ranges from 6

to 20 inches in thickness. The Ap horizon or the surface layer is 6 to 10 inches thick and is dark grayish brown, grayish brown, or pale brown. The A2 horizon is 3 to 13 inches thick and commonly is pale-brown or light yellowish-brown fine sandy loam, sandy loam, or loamy sand. The B1 horizon is dark-brown, brown, yellowish-brown, strong-brown, or brownish-yellow sandy loam or sandy clay loam 2 to 12 inches thick. In places the B1 horizon is lacking. The B2t horizon is yellowish-red to red sandy loam, sandy clay loam, or clay loam. It is commonly 12 to 24 inches thick. In places the lower part of this horizon is mottled pale brown and strong brown. The B3 horizon is 3 to 16 inches of yellowish-red, reddish-yellow, or strong-brown sandy loam or fine sandy loam. In places there are gray, pale-brown, and yellowish-brown mottles. The C horizon is at a depth of 32 to 44 inches. This horizon is brownish yellow or reddish-brown and has white, gray, pale-brown, and yellow mottles.

Cahaba soils are associated with Johns, Kalmia, Kenansville, Lakeland, Leaf, and Wahee soils. Cahaba soils are redder than Johns, Kalmia, and Kenansville soils and finer textured than Lakeland soils. Cahaba soils are better drained than Leaf and Wahee soils.

Cahaba loamy fine sand, 0 to 3 percent slopes (CaA).—This soil has a profile similar to that described as representative for the series.

Included with this soil in mapping are a few areas of Johns, Kalmia, Kenansville, Lakeland soils and small areas of deep sands, which are indicated on the map by the symbol for a sand spot. Also included are a few areas of soils that have a yellowish-red subsoil and a combined surface layer and subsoil thickness ranging from 44 to 60 inches. In addition there are a few areas of wetter soils, 1 to 4 acres in size, which are indicated on the map by the symbol for a wet spot, and a few gall spots less than 1 acre in size where most of the topsoil is eroded.

Good tilth is easily maintained on this Cahaba soil. Crops respond well to fertilizer and lime. About 55 percent of the acreage is cultivated, and the rest is wooded. Principal crops are tobacco, cotton, corn, and soybeans. Capability unit I-1; woodland group 2o7.

Cahaba-Leaf complex (Cb).—This complex consists of nearly level, well-drained Cahaba soils and nearly level, poorly drained Leaf soils. The soils are in long, narrow areas on low microridges and in narrow depressions. Most ridges are 50 to 200 feet wide and about 6 to 12 inches higher than the depressions, which are 20 to 100 feet wide.

Cahaba and similar soils are on low ridges and make up about 56 percent of the complex. Leaf and similar soils are in the narrow depressions and make up about 33 percent of it. The remaining 11 percent is made up of the soils on low ridges that are not so well drained and that have a yellowish-brown subsoil. Individual areas of this complex range in size from about 50 to 1,000 acres.

The Cahaba soil in this complex has the profile described as representative for the Cahaba series. Included with this soil in mapping are a few small areas of soils that have slopes of 2 to 4 percent and a few areas of sandier soils.

The Leaf soil has a profile similar to that described as representative for the Leaf series. Included with the Leaf soils in mapping are slightly better drained soils that have a gray, clayey subsoil. Also included are small areas of poorly drained soils that have a loamy subsoil.

About 70 percent of the acreage is cultivated or is pasture. The remaining areas are wooded. These areas are somewhat difficult to manage because of the wide variation in soils within a relatively small area. Principal crops are tobacco, cotton, corn, soybeans, tall fescue, and bahiagrass. Capability unit IIIw-5; Cahaba, woodland group 2o7; Leaf, woodland group 2w9.

Cape Fear Series

The soils of the Cape Fear series are on low terraces and in depressions. They are nearly level and very poorly drained. They formed in stream deposits of clayey sediment.

In a representative profile the surface layer is black loam about 11 inches thick. The next layer is about 51 inches thick. The upper 6 inches is dark-gray, firm clay, the next 35 inches is dominantly gray, very firm clay loam, and the lower 10 inches is gray, firm sandy clay loam. The underlying material is gray loamy sand and sand.

Cape Fear soils are high in content of organic matter. Permeability is slow, and runoff is very slow. Water stands on this soil for several months at a time. Available water capacity is medium.

Representative profile of Cape Fear loam in an area of hardwood timber in Florence County, about 8 miles northeast of Florence, and 3/4 mile north of intersection of State Highways 165 and 24:

A1—0 to 11 inches, black (10YR 2/1) loam; weak, medium, granular structure; friable; many medium and fine roots; very strongly acid (pH 4.6); clear, smooth boundary.

B21tg—11 to 17 inches, dark-gray (10YR 4/1) clay; weak, medium, subangular blocky structure; firm; patchy clay films on surfaces of peds; common fine roots and pores; organic-matter stains around root channels; very strongly acid (pH 4.7); gradual, wavy boundary.

B22tg—17 to 52 inches, gray (10YR 6/1) clay loam; common, fine, distinct, strong-brown mottles; weak, medium, subangular blocky structure; very firm; patchy clay films on surfaces of peds; few fine roots; very strongly acid (pH 4.8); gradual, wavy boundary.

B3tg—52 to 62 inches, gray (10YR 6/1) sandy clay loam; massive when wet, firm; very strongly acid (pH 5.0); clear, wavy boundary.

IIC—62 to 72 inches gray (10YR 6/1) loamy sand and sand; single grained; loose; strongly acid (pH 5.1).

The solum ranges from 40 to more than 60 inches in thickness. Reaction throughout the profile is strongly acid to very strongly acid. The A horizon ranges from 7 to 12 inches in thickness, and is black or very dark gray. The moist color value of the upper 10 inches of the surface soil is 3 or less.

The Bt horizon is 30 inches or more in thickness. It is commonly very dark gray or dark gray in the upper part and gray in the lower part. In places there are few to common mottles of yellowish brown and strong brown. The Bt horizon is clay loam, silty clay, and clay. The uppermost 20 inches of the Bt horizon is made up of more than 35 percent clay and more than 30 percent silt. Where the solum is more than 60 inches thick, the amount of clay in the Bt horizon decreases by more than 20 percent within a depth of 60 inches.

Cape Fear soils are associated with Pantego, Leaf, and Wahee soils. They have a finer textured subsoil than Pantego soils and a thicker dark surface layer than Leaf and Wahee soils.

Cape Fear loam (Ce).—This is the only Cape Fear soil mapped in the survey area. It is in long, narrow areas on low terraces and depressions along small drainageways in the lowlands.

Included with this soil in mapping are a few areas of Pantego, Leaf, and Wahee soils and a few areas of recent alluvial soils.

All the acreage is wooded. Frequent flooding is a hazard. Capability unit IVw-2; woodland group 2w9.

Chastain Series

The soils of the Chastain series are nearly level and poorly drained. They formed in clayey alluvial sediment on flood plains and are subject to frequent flooding.

In a representative profile the surface layer is grayish-brown clay loam about 4 inches thick. The next layer is about 62 inches thick. The upper 17 inches is mostly firm

gray clay; the lower 45 inches is firm gray clay loam. The underlying material is dominantly gray clay loam.

Chastain soils are moderate in content of organic matter. Permeability is slow, and runoff is very slow. The water table is near the surface most of the time. Available water capacity is high.

Representative profile of Chastain soils, frequently flooded, in an area of hardwoods in Sumter County, 1 3/4 miles southwest of Foxville siding, and 100 feet northwest of logging road:

A1—0 to 4 inches, grayish-brown (2.5Y 5/2) clay loam; weak, medium, subangular blocky structure; massive when wet; firm; slightly sticky; many fine and medium roots; very strongly acid (pH 4.8); abrupt, smooth boundary.

B21g—4 to 21 inches, gray (N 6/0) clay; many, medium and coarse, distinct, strong-brown (7.5YR 5/8) and yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; massive when wet; firm; slightly sticky; many fine and medium roots; many fine pores; organic-matter stain in old root channels; few fine micalike flakes; strongly acid (pH 5.2); gradual, smooth boundary.

B22g—21 to 44 inches, gray (N 6/0) clay loam; many, medium and coarse, distinct, strong-brown (7.5YR 5/8) mottles and common, fine and medium, distinct, yellowish-brown (10YR 5/8) and pale-brown (10YR 6/3) mottles; weak, medium, subangular blocky structure; massive when wet; firm; slightly sticky; few fine roots; few fine pores; few fine micalike flakes; few, fine, black concretions; strongly acid (pH 5.3); gradual, smooth boundary.

B23g—44 to 52 inches, gray (N 6/0) clay loam; many, medium and coarse, distinct, strong-brown (7.5YR 5/8) mottles and common, fine and medium, faint, yellowish-brown (10YR 5/8) and pale-brown (10YR 6/3) mottles; weak, medium, subangular blocky structure; massive when wet; firm; slightly sticky; few fine roots; few fine pores; common, fine and medium, black concretions; few fine micalike flakes; strongly acid (pH 5.5); gradual, smooth boundary.

B3g—52 to 66 inches, gray (N 6/0) clay loam; many, medium and coarse, distinct, strong-brown (7.5YR 5/8) mottles and common, fine and medium, faint, yellowish-brown (10YR 5/8) and pale-brown (10YR 6/3) mottles; weak, medium, subangular blocky structure; massive when wet; firm; slightly sticky; few fine roots; few fine pores; common, fine and medium, black concretions; few fine micalike flakes; strongly acid (pH 5.4); clear, smooth boundary.

Cg—66 to 75 inches, gray (N 5/0) clay loam; many, medium, distinct, brown (7.5YR 5/4) and strong-brown (7.5YR 5/8) mottles; massive; firm; slightly plastic; few fine micalike flakes; medium acid (pH 5.6).

The solum ranges from about 40 to 72 inches in thickness. The A horizon is 4 to 12 inches thick. It is commonly dark gray or grayish brown, but in places it is yellowish brown. The A horizon is clay loam, silty clay loam, silt loam, and loam. Reaction in the B horizon is strongly acid. The Bg horizon is gray, dark-gray, or light brownish-gray clay, silty clay, clay loam, or silty clay loam. It has few to many strong-brown, yellowish-brown, brown, pale-brown, and yellowish-red mottles. The Bg horizon appears massive when wet and has weak to moderate subangular blocky structure when moist. The C horizon is gray or light-gray clay loam or silty clay with few to many brown mottles. Sandy strata occur in places at depths below 40 inches.

Chastain soils are associated with Congaree, Chewacla, and Wehadkee soils. They have a finer textured subsoil than those soils.

Chastain soils, frequently flooded (Cf).—This is an undifferentiated group of predominantly poorly drained alluvial soils. There is no regularity of pattern in the distribution of soils within the mapped areas. Chastain soils are the most extensive. They have the profile described as representative for the Chastain series. Chastain soils, frequently flooded, was mapped at a lower intensity than most other mapping units in this survey.

Included with these soils in mapping are areas of Chewacla and Wehadkee soils and areas of soils that are flooded most of the year.

Most of the acreage is in hardwoods. Capability unit VIIw-2; woodland group 2w9.

Chastain-Chewacla association, frequently flooded (Cg).—These areas of Chastain and Chewacla soils occur in heavily wooded areas on flood plains. The Chastain soils are poorly drained, and the Chewacla soils are somewhat poorly drained.

About 45 percent of the area is Chastain soils, and 45 percent is Chewacla soils. The remaining 10 percent is made up of areas of Congaree and Wehadkee soils and small areas of soils that are covered with water most of the time.

A representative profile of a Chastain soil and a Chewacla soil is given as part of the description of each series. Chastain-Chewacla association, frequently flooded, was mapped at a lower intensity than most other mapping units in this survey.

If drained and protected from flooding, these soils are suitable for cultivation or pasture. They are used for timber production. Capability unit VIIw-2; Chastain, woodland group 2w9, Chewacla, woodland group 1w8.

Chastain-Chewacla-Congaree association, frequently flooded (Ch).—These soils are in broad heavily wooded areas on flood plains.

The poorly drained Chastain soils make up about 40 percent of the association. They are in the lowest areas, usually in sloughs and narrow depressions. The somewhat poorly drained Chewacla soils make up about 33 percent of the association. They are on low ridges adjoining the Chastain soils. The well-drained Congaree soils make up about 24 percent of the association. They are on the higher ridges in the area. The remaining 3 percent are sandy or wet soils.

A profile description of Chastain, Chewacla, and Congaree soils is given as a part of the series description of each of these soils.

Chastain-Chewacla-Congaree association, frequently flooded, was mapped at a lower intensity than most other mapping units in this survey.

All the acreage is wooded. It is mostly in cypress and water-tolerant hardwoods. Pine grows on the higher areas. The entire area floods every year, and water stands on the lower areas a large part of the year. If protected from flooding, the higher areas of Congaree and Chewacla soils can be cultivated or used for pasture. Capability unit VIIw-2; Chastain, woodland group 2w9, Chewacla, woodland group 1w8, Congaree, woodland group 1o7.

Chewacla Series

The soils of the Chewacla series are nearly level and somewhat poorly drained. They formed in loamy alluvium on flood plains of the larger streams. They are subject to frequent flooding.

In a representative profile the surface layer is dark-brown silty clay loam about 7 inches thick. The next layer extends to a depth of more than 74 inches. The upper part is 7 inches of dark-brown clay loam; the next 15 inches is mottled light yellowish-brown loam; the next 18 inches is mottled light yellowish-brown sandy clay loam; the next 14 inches is mottled fine sandy loam; and the lower part is 13 inches of mottled loam.

Chewacla soils are moderate in content of organic matter. Permeability is moderate, and runoff is slow. Available water capacity is high.

These soils are mapped in an undifferentiated unit.

Representative profile of Chewacla soils, frequently

flooded, in an area of hardwoods in Sumter County, about 2 1/2 miles east of the Wateree River, on U.S. Highway 76 and 1,000 feet northwest of the highway:

A1—0 to 7 inches, dark-brown (7.5YR 4/4) silty clay loam; weak, medium, subangular blocky structure; friable; many fine and medium roots and few large roots; many fine and medium pores; few fine mica flakes; very strongly acid (pH 5.0); clear, smooth boundary.

B1—7 to 14 inches, dark-brown (7.5YR 4/4) clay loam; weak, medium, subangular blocky structure; friable; many fine and medium roots; many fine and medium pores; many, fine, black concretions; few fine mica flakes; strongly acid (pH 5.1); gradual, wavy boundary.

B21—14 to 17 inches, yellowish-brown (10YR 5/6) loam; many, fine and medium, distinct, strong-brown (7.5YR 5/6) and pale-brown (10YR 6/3) mottles; weak, medium, subangular blocky structure; friable; many fine and medium roots; many fine and medium pores; may fine mica flakes; few, fine, black concretions; strongly acid (pH 5.1); gradual, wavy boundary.

B22—17 to 29 inches, light yellowish-brown (10YR 6/4) loam; common, medium, distinct, strong-brown (7.5YR 5/8), pale-brown (10YR 6/3), and light brownish-gray (10YR 6/2) mottles; moderate, medium, subangular blocky structure; friable; few fine roots; few fine pores; common fine mica flakes; few, fine, black concretions; strongly acid (pH 5.2); gradual, wavy boundary.

B23—29 to 47 inches, light yellowish-brown (10YR 6/4) sandy clay loam; common, medium, distinct, strong-brown (7.5YR 5/8), pale-brown (10YR 6/3), yellowish-red (5YR 5/8), and light brownish-gray (10YR 6/2) mottles; weak, medium, subangular blocky structure; friable; few fine roots; few fine pores; common fine mica flakes; common, fine and medium, black concretions; strongly acid (pH 5.2); gradual, smooth boundary.

B31—47 to 61 inches, mottled light yellowish-brown (10YR 6/4), light brownish-gray (10YR 6/2), yellowish-red (5YR 5/8), and strong-brown (7.5YR 5/8) fine sandy loam; weak, medium, subangular blocky structure; friable; common fine and medium roots; common fine and medium pores; common fine mica flakes; common, medium, black concretions; strongly acid (pH 5.4); gradual, smooth boundary.

B32—61 to 74 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/8), reddish-brown (5YR 5/4), and gray (10YR 6/1) loam; weak, medium, subangular blocky structure; slightly firm; slightly sticky; few fine roots; few fine pores; common fine mica flakes; many, fine and medium, black concretions; strongly acid (pH 5.5).

The solum ranges from about 40 to 75 inches in thickness. Reaction is medium to very strongly acid in the A horizon and medium acid to strongly acid below the A horizon. The A horizon commonly is brown, dark-brown, dark yellowish-brown, and reddish-brown silty clay loam and clay loam 6 to 10 inches thick. The B horizon ranges from fine sandy loam to silty clay loam. The upper part is yellowish brown, light yellowish brown, brown, dark brown, or reddish brown. Mottles of chroma 2 or less are within a depth of 20 inches. The amount of gray increases with depth. The lower part of the B horizon is highly mottled with gray, yellowish brown, strong brown, and yellowish red.

Chewacla soils are associated with Congaree and Chastain soils. They are more poorly drained than Congaree soils and are better drained than Chastain soils.

Chewacla soils, frequently flooded (Cm).—This soil has the profile described as representative for the series. This is an undifferentiated group of predominantly somewhat poorly drained alluvial soils. There is no regularity of pattern in the distribution of soils within the mapped areas. Chewacla soils are the most extensive. Mapped areas are in poorly accessible wooded areas on flood plains. Chewacla soils, frequently flooded, was mapped at a lower intensity than most other mapping units in this survey.

Included with these soils in mapping are Congaree and Chastain soils and somewhat poorly drained soils that have a clayey subsoil. Also included are some areas of soils that have a loam or fine sandy loam surface layer.

Most of the acreage is wooded. If drained and protected from flooding, the soils can be cultivated or used for pasture. The soils are flooded several times each year. Capability unit VIIw-2; woodland group 1w8.

Chipley Series

The soils of the Chipley series are nearly level and moderately well drained to somewhat poorly drained. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is black loamy sand about 7 inches thick. This layer is underlain by loamy sand to a depth of about 28 inches. The upper 8 inches is dominantly yellowish brown; the lower 13 inches is mottled light brownish gray. Below this layer, to a depth of more than 60 inches, is mottled sand.

Chipley soils are low in content of organic matter. Permeability is rapid but is impeded by a high water table. Runoff is slow. Available water capacity is low.

Representative profile of Chipley loamy sand, dark surface, in a wooded area in Florence County, about 2 miles southwest of Johnsonville and 0.25 mile southeast of intersection of State Highways 111 and 738:

A1—0 to 7 inches, black (N 2/0) loamy sand that contains a few grains of fine white sand; weak, medium, granular structure; very friable; many tree roots of all sizes; few medium pores; very strongly acid (pH 4.7); clear, smooth boundary.

AC—7 to 9 inches, grayish-brown (2.5Y 5/2) loamy sand; weak, medium, granular structure; very friable; black loamy sand from surface layer is in some root channels; common small and medium roots; very strongly acid (pH 5.0); clear, smooth boundary.

C1—9 to 15 inches, yellowish-brown (10YR 5/4) loamy sand; few, fine, distinct, strong-brown mottles; single grained; very friable; centers of brown mottles are slightly firm; very strongly acid (pH 5.0); gradual, wavy boundary.

C2—15 to 28 inches, light brownish-gray (10YR 6/2) loamy sand; many, medium, distinct, yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/6) mottles; single grained; very friable to loose; strongly acid (pH 5.3); gradual, wavy boundary.

C3—28 to 60 inches, dark-brown (7.5YR 4/4), dark reddish-gray (5YR 4/2), and dark grayish-brown (10YR 4/2) sand; few, fine, yellow and gray mottles; single grained; loose; medium acid (pH 5.7).

Reaction ranges from very strongly acid to medium acid throughout the profile. In undrained areas the water table is at a depth of 12 inches or less for about 90 days in most years. In the driest seasons it is at depths between 36 and 48 inches. The Ap or Al horizon is 6 to 10 inches thick and is black or very dark gray. In places the AC horizon is grayish-brown or pale-brown loamy sand 2 to 5 inches thick. The C horizon is loamy fine sand to sand and extends in places to a depth of 60 inches or more. The upper part has a matrix color of yellowish brown, light yellowish brown, or pale brown, commonly containing few to many mottles of chroma 2 or less. The lower part commonly has a matrix color with chroma of 2 or less and few to many mottles of higher chroma.

These soils have slightly more silt plus clay than is defined for series, but this difference does not significantly alter their usefulness and behavior.

Chipley soils are associated with Barth, Olanta, Lynchburg, Lakeland, and Rutlege soils. Chipley soils are coarser textured than Barth, Olanta, and Lynchburg soils; more poorly drained than Lakeland soils; and better drained than Rutlege soils.

Chipley loamy sand, dark surface (Cn).—This is the only Chipley soil mapped in the survey area. It is on broad areas.

Included with this soil in mapping are small areas of Barth, Olanta, and Lynchburg soils. Also included are a few areas of soils of the Rutlege, Rains, and Pantego series. These wetter areas, in depressions, are less than 4 acres in size. They are shown on the map by wet spot symbols. In some areas horizons at depths of about 3 feet resemble an organic hardpan horizon in color but are soft and loose.

This soil is easily tilled. Crops respond well to fertilizer and lime. About 50 percent of the acreage is in cultivated crops; the rest is wooded. Principal crops are tobacco, cotton, corn, soybeans, and oats. Capability unit IIIw-1; woodland group 3w2.

Congaree Series

The soils of the Congaree series are nearly level, deep, and well drained. They formed in alluvial sediment. The soils are on first bottoms and are subject to occasional flooding for short periods.

In a representative profile the surface layer is dark yellowish-brown loam about 6 inches thick. The upper 10 inches of the underlying material is dark yellowish-brown loam. The next 46 inches is silty clay loam that is dark yellowish brown in the upper 12 inches and brown in the lower part. The lower 10 inches is dominantly brown silt loam.

Congaree soils are moderate in organic-matter content. Permeability is moderate. Runoff is slow and available water capacity is high.

Representative profile of Congaree loam in a cultivated field in Sumter County, 5 miles west of Rembert on the State Prison Farm, 1 3/4 miles west of the State Prison Farm headquarters:

Ap—0 to 6 inches, dark yellowish-brown (10YR 4/4) loam; weak, fine, subangular blocky structure; friable; many fine roots; many fine roots and pores; many fine mica flakes; few black concretions; strongly acid (pH 5.5); clear, smooth boundary.

C1—6 to 16 inches, dark yellowish-brown (10YR 4/4) loam; massive; friable; many fine roots and pores; common fine mica flakes; slightly acid (pH 6.2); clear, smooth boundary.

C2—16 to 28 inches, dark yellowish-brown (10YR 4/4) silty clay loam; few, fine, distinct, pale-brown mottles; massive; friable; many fine roots and pores; many fine mica flakes; few black concretions; strongly acid (pH 5.5); clear, smooth boundary.

C3—28 to 62 inches, brown (10YR 5/3) silty clay loam; few, fine, distinct, yellowish-brown and light-gray mottles; massive; friable; many fine roots and pores; many fine mica flakes; common black concretions; strongly acid (pH 5.2); gradual, smooth boundary.

C4—62 to 72 inches, brown (10YR 5/3) silt loam; common, fine, distinct, yellowish-brown mottles, and few, medium, distinct, gray (10YR 6/1) mottles; massive; friable; many fine mica flakes; common black concretions; strongly acid (pH 5.2).

The A horizon ranges from 5 to 10 inches in thickness. It is commonly dark yellowish-brown, brown, dark-brown, or reddish-brown loam. The C horizon, in places, has thin layers of contrasting texture. From a depth of 10 to 40 inches it is fine sandy loam, loam, silt loam, clay loam, or silty clay loam. Some areas contain thin horizons that have a texture of loamy fine sand or silty clay. The C horizon below 40 inches ranges from loamy fine sand to silty clay loam. Reaction ranges from slightly acid to strongly acid in the C horizon at depths between 10 and 40 inches. Predominant colors of the C horizon are dark yellowish brown, brown, dark brown, strong brown, or yellowish brown. Some pedons have pale-brown mottles at depths of 20 inches or less. A few gray mottles are at depths below 20 inches. Mica flakes are common to many throughout the profile.

Congaree soils are associated with Chewacla and Chastain soils. They are better drained than Chewacla and Chastain soils.

Congaree loam (Co).—This is the only Congaree soil mapped in the survey area. It is on flood plains and occasionally is flooded for short periods.

Included with this soil in mapping are areas of Chewacla and Chastain soils and a few areas of soils that have a silt loam or fine sandy loam surface layer. Also included are a few areas of soils that have slightly less clay in the underlying material than that defined for the series.

Good tilth is generally easy to maintain on this soil. Crops respond well to fertilizer and lime.

Most of the acreage is wooded. Principal crops are corn, soybeans, small grain, and pasture grasses. In some years crops may be lost or damaged from flooding. This soil can be tilled or grazed much sooner after rains than adjoining first-bottom soils. Capability unit IIw-4; woodland group 1o7.

Coxville Series

The soils of the Coxville series are nearly level and poorly drained. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is very dark gray fine sandy loam about 6 inches thic. The next layer is dominantly gray and about 59 inches thick. The upper 16 inches is sandy clay loam that is mostly firm; the lower 43 inches is very firm sandy clay grading to firm as depth increases. The underlying material is dominantly gray sandy clay.

Coxville soils are moderate in content of organic matter. Permeability is moderately slow, and runoff is ponded or slow. The water table is at or near the surface in wet seasons. Available water capacity is medium.

Representative profile of Coxville fine sandy loam in an idle field in Florence County, about 4 miles west of Claussen on State Highway 57:

Ap—0 to 6 inches, very dark gray (10YR 3/1) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; slightly acid (pH 6.2); clear, smooth boundary.

B1g—6 to 10 inches, gray (10YR 5/1) sandy clay loam; few, fine and medium distinct mottles of yellowish brown (10YR 5/6);some very dark streaks and pockets of material from the Ap horizon in root channels; weak, medium, subangular blocky structure; friable; plastic and slightly sticky; few, fine roots; medium acid (pH 5.9); clear, smooth boundary.

B21tg—10 to 22 inches, gray (10YR 5/1) sandy clay loam; common, medium to coarse, distinct mottles of yellowish brown (10YR 5/6), and few, medium, prominent mottles of red (2.5YR 4/8); weak, medium, subangular blocky structure; firm, plastic and sticky; thin patchy clay films on faces of peds; very strongly acid (pH 4.8); gradual, wavy boundary.

B22tg—22 to 38 inches, gray (10YR 5/1) sandy clay; many, medium, distinct mottles of yellowish brown (10YR 5/6) and red (2.5YR 4/8); moderate, medium, subangular blocky structure; very firm, plastic and sticky; continuous distinct clay films on faces of peds; very strongly acid (pH 4.7); gradual, wavy boundary.

B23tg—38 to 55 inches, gray (10YR 5/1) and dark-gray (10YR 4/1) sandy clay; common, medium, distinct, yellowish-brown (10YR 5/6) mottles, and few, fine prominent, red mottles; mottles decrease in number with depth; weak, medium, subangular blocky structure; firm, plastic, and sticky; patchy clay films on faces of peds, very strongly acid (pH 4.9); gradual, wavy boundary.

B23g—55 to 65 inches, mottled gray (10YR 5/1 and 10YR 6/1), dark-gray (10YR 4/1), brownish-yellow (10YR 6/6), and yellowish-brown (10YR 5/6) sandy clay; weak, medium, subangular blocky structure; firm, plastic and sticky; very strongly acid (pH 4.7); gradual, wavy boundary.

Cg—65 to 75 inches, gray (10YR 6/1), light-gray (10YR 7/1), and dark-gray (10YR 4/1), brownish-yellow (10YR 6/6), and yellowish-(10YR 6/3) and yellowish-brown (10YR 5/4) mottles in upper part; mottles decrease in number with depth; massive; firm; plastic and sticky; pockets and lenses of sandy materials; very strongly acid (pH 4.5).

The solum is more than 60 inches thick. The A horizon ranges from slightly acid to very strongly acid in reaction and from 6 to 16 inches in thickness, but commonly is 6 to 8 inches thick. The Ap horizon is black, very dark gray, or dark gray and is 4 to 9 inches thick. In places there is a dark gray or grayish-brown A2 horizon, 2 to 7 inches thick. A few yellowish-brown mottles occur in some profiles. The A2 horizon is very fine sandy loam or fine sandy loam. The B horizon is medium acid to very strongly acid. The B1 horizon ranges in thickness from 0 to 4 inches. The Btg horizon is sandy clay, or clay that has a matrix color of light gray, gray, or grayish-brown mottled with yellow, brown, and red. The Btg horizon ranges from about 20 to 45 inches in thickness. The top 20 inches contains 35 to 45 percent clay, less than 30 percent silt, and more than 30 percent sand. The B3g horizon is sandy clay loam, sandy clay, or clay 10 to 25 inches thick. The C horizon is mottled gray, brown, and yellow sandy clay or clay that, in places, is stratified with pockets of sandy clay loam and sandy loam material.

Coxville soils are associated with the Norfolk, Goldsboro, Duplin, Lynchburg, Rains, and Pantego soils. They have a finer textured subsoil than Norfolk, Goldsboro, Lynchburg, Rains, and Pantego soils, and they are more poorly drained than Duplin soils.

Coxville fine sandy loam (Cv).—This is the only Coxville soil mapped in the survey area. It is on broad flats and in slight depressions and oval shaped bays throughout the survey area.

Included with this soil in mapping are a few small areas of Rains, Pantego, and Lynchburg soils and a few areas that have sandy loam and loam surface layer. Also included are a few small areas of somewhat poorly drained soils that have sandy clay subsoil.

Tilth is fair on this soil. Even where properly drained, it cannot be cultivated as soon after a rain as the more friable, better drained soils. Crops respond well to fertilizer and lime.

About 70 percent of the acreage is wooded. The rest is cropland and pasfure. Principal crops are corn, soybeans, small grain, and pasture grasses. In places truck crops are grown on this soil. Capability unit IIIw-2; woodland group 2w9.

Duplin Series

The soils of the Duplin series are nearly level to gently sloping, deep, and moderately well drained. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is dark-gray fine sandy loam about 7 inches thick. The next layer is about 65 inches thick. The upper 4 inches is pale-brown loam; the next 19 inches is yellowish-brown firm clay loam that contains gray mottles in the lower part; the next 12 inches is mottled, firm clay loam; and the lower 30 inches is mottled, firm clay.

Duplin soils are moderately low in content of organic matter. Permeability is moderately slow and slow. Runoff is slow, and available water capacity is medium.

In places Duplin soils were mapped as an undifferentiated unit with Exum soils.

Representative profile of Duplin fine sandy loam in a cultivated field in Florence County, about 4 miles southeast of Lake City, 3,000 feet northeast of intersection of county road and State Highway 341, and 100 feet south of the county road:

Ap—0 to 7 inches, dark-gray (10YR 4/1) fine sandy loam; weak, fine granular structure; very friable; many fine roots; some mixing of underlying horizon through deep cultivation; medium acid (pH 5.9); clear, smooth boundary.

B1—7 to 11 inches, pale-brown (10YR 6/3) loam; weak, medium, subangular blocky structure; friable; common fine roots; common fine pores; common tongues of Ap horizon material; strongly acid (pH 5.1); clear, wavy boundary.

B21t—11 to 18 inches, yellowish-brown (10YR 5/4) clay loam; common, medium, faint, yellowish-brown (10YR 5/6) mottles and few, fine, distinct, yellowish-red mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; few fine roots; common fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

B22t—18 to 30 inches, yellowish-brown (10YR 5/4) clay loam; common, medium, distinct, gray (10YR 6/1) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; common fine and medium pores; strongly acid (pH 5.1); gradual, wavy boundary.

B23t—30 to 42 inches, mottled yellowish-brown (10YR 5/4), gray (10YR 6/1), red (2.5YR 4/6), and strong-brown (7.5YR 5/6) clay loam; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; few soft plinthite nodules (less than 5 percent); very strongly acid (pH 5.0); gradual, wavy boundary.

B3t—42 to 72 inches, mottled red (2.5YR 4/6), gray (10YR 6/1), and yellowish-brown (10YR 5/4) clay; a few pockets of sandy loam material below a depth of 65 inches; weak, medium, subangular blocky structure; firm; patchy clay films on peds; few, soft plinthite nodules (less than 5 percent); very strongly acid (pH 5.0).

The solum is more than 60 inches thick, and the A horizon commonly is 6 to 9 inches thick but ranges from 5 to 11 inches. In the A horizon reaction is medium acid to strongly acid. It is dark gray, dark grayish brown, or grayish brown. In places there is a brown, pale-brown, or very pale brown A2 horizon 2 to 4 inches thick. Reaction is strongly acid to very strongly acid in the B horizon. If the B1 horizon is present, it is 2 to 10 inches of pale-brown, light yellowish-brown, or yellowish-brown sandy clay loam or sandy loam. The B2t horizon is clay loam, sandy clay, or clay and it is more than 30 inches thick. The upper part commonly is yellowish brown and has few to common mottles of brown, gray, and red. The lower part is highly mottled with yellow, brown, red, and gray. Mottles with chroma of 1 or 2 are at a depth of less than 30 inches. The B3 horizon is sandy clay loam, sandy clay, or clay mottled with gray, yellowish-brown, and red. In places the lower B horizon contains a few soft plinthite nodules, but no horizon, within a depth of 60 inches, has as much as 5 percent plinthite. Some of the soils in mapping unit Dp lack the thick Bt horizons as defined in the range for Duplin series, but the mineralogy and clay content are similar and their usefulness and behavior are not changed.

Duplin soils are associated with Coxville, Exum, Goldsboro, Leaf, Lynchburg, Norfolk, Pantego, Rains, and Wahee soils. They have a finer textured subsoil than Exum, Goldsboro, Lynchburg, Norfolk, Pantego, and Rains soils and are better drained than Coxville, Leaf, and Wahee soils.

Duplin fine sandy loam (Dp).—This nearly level soil has the profile described as representative for the series. Included in mapping are small areas of Goldsboro, Exum, Lynchburg, Wahee, and Johns soils and some areas that have a sandy loam surface layer. A few areas contain somewhat poorly drained, clayey soils that have more gray throughout the profile and are predominantly gray below a depth of about 20 inches. Also included are areas less than 4 acres in size of Coxville, Rains, and unclassified soils. These wetter areas, commonly in depressions, are shown on the map by a wet spot symbol. Several large areas of soils on terraces along the larger streams are also included. In these the clay content decreases by more than 20 percent at depths between 50 to 60 inches.

This soil has fairly good tilth. Crops respond well to fertilizer and lime.

About 65 percent of the acreage is cultivated or in pasture. The rest is wooded. Principal cultivated crops are tobacco, cotton, corn, soybeans, truck crops, and small grain. Capability unit IIw-2; woodland group 2w8.

Duplin and Exum soils, 0 to 2 percent slopes (DuA).—These are deep, moderately well drained, nearly level soils in broad areas. They formed in clayey and silty Coastal Plain sediment. Any mapped area may be mainly Duplin soils, Exum soils, or any combination of the two soils. About 50 percent of this mapping unit is Duplin fine sandy loam, and about 35 percent is Exum fine sandy loam. The remaining acreage is less extensive soils. The Duplin soils have a profile similar to the one described as representative for the Duplin series. The Exum soils have a profile similar to that described as representative for the Exum series, but the surface layer is fine sandy loam.

Included in this mapping unit are small areas of Goldsboro and Varina soils and small areas of moderately well drained soils that have a firm to very firm clayey subsoil high in silt content, and combined surface layer and subsoil 50 to 60 inches thick. Also included are small areas of Coxville soils less than 4 acres in size. These are commonly in depressions and are shown on the map by wet spot symbols. A few small areas where slopes are 2 to 4 percent are also included.

Tilth is moderately good on these soils; however, when the soils are wet, they cannot be cultivated without clodding. Crops respond well to lime and fertilizer.

About 75 percent of the acreage is cultivated or in pasture. The rest is wooded. Principal crops are cotton, tobacco, corn, soybeans, and small grain. Capability unit IIw-2; woodland group 2w8.

Duplin and Exum soils, 2 to 6 percent slopes (DuB).—These are deep, moderately well drained, gently sloping soils that formed in clayey and silty Coastal Plain sediment. Any mapped area may be mainly Duplin or Exum soils or any combination of the two soils. About 50 percent of most areas is Duplin fine sandy loam, about 30 percent is Exum fine sandy loam, and the remaining acreage is made up of less extensive soils. The Duplin soils and Exum soils have a profile similar to those described as representative for their respective series, but the surface layer of the Exum soils is fine sandy loam.

Included in mapping with these soils are areas of Varina, Norfolk, and Sunsweet soils. Also included are small areas of soils that have a firm to very firm clayey subsoil high in silt content, and a surface layer and subsoil that have a combined thickness of 50 to 60 inches. Some areas contain small gall spots, an acre or less in size, where most of the topsoil has eroded. A few small areas of soils where slopes are less than 2 percent, and a few where slopes are 6 to 8 percent are also included.

The soil cannot be cultivated when wet because of clodding and crusting of the plow layer. Crops respond well to lime and fertilizer.

About 60 percent of the acreage is cultivated or in pasture. The rest is wooded. Principal crops are cotton, corn, soybeans, and small grain. Erosion is a hazard on these soils. Capability unit IIe-3; woodland group 2w8.

Exum Series

The soils of the Exum series are deep, nearly level to gently sloping, and moderately well drained. They formed in silty Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown sandy loam about 7 inches thick. The next layer is about 65 inches thick. The upper 30 inches is dominantly yellowish-brown, firm clay loam that has gray mottles beginning at a depth of about 27 inches; the next 12 inches is mottled, yellowish-brown, firm and very firm clay; the next 12 inches is mottled, firm and very firm clay loam; and the lower 11 inches is mottled, firm and friable sandy clay loam.

Exum soils are low in content of organic matter. Permeability is moderately slow, and runoff is slow to medium. Available water capacity is medium.

Representative profile of Exum sandy loam in a cultivated field in Florence County, about 5 1/2 miles south of Pamplico, 1,400 feet west of intersection of dirt road and State Highway 86, and 150 feet south of the dirt road:

Ap—0 to 7 inches, grayish-brown (10YR 5/2) sandy loam; weak, fine, granular structure; very friable; common fine roots; few lumps of underlying material brought up by deep plowing; medium acid (pH 5.6); abrupt, smooth boundary.

B21t—7 to 17 inches, yellowish-brown (10YR 5/6) clay loam; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; common fine roots and pores; very strongly acid (pH 4.9); gradual, wavy boundary.

B22t—17 to 27 inches, yellowish-brown (10YR 5/6) clay loam; few, medium, distinct, yellowish-red (5YR 5/6) and pale-brown (10YR 6/3) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; few fine roots; common fine and medium pores; strongly acid (pH 5.1); gradual wavy boundary.

B23t—27 to 37 inches, yellowish-brown (10YR 5/8) clay loam; common, medium, distinct, pale-brown (10YR 6/3), yellowish-red (5YR 4/8), and light brownish-gray (10YR 6/2) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; common fine pores; strongly acid (pH 5.4); gradual, wavy boundary.

B24t—37 to 49 inches, yellowish-brown (10YR 5/6) clay; common, medium, prominent, red (2.5YR 4/8) mottles and common, medium, distinct, yellowish-red (2.5YR 4/8), light brownish-gray (10YR 6/2), and gray (10YR 6/1) mottles; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; few to common fine pores; strongly acid (pH 5/3); gradual, wavy boundary.

B25t—49 to 61 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/8), gray (10YR 6/1), and red (2.5YR 4/8) clay loam; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; strongly acid (pH 5.1); gradual, wavy boundary.

B3t—61 to 72 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/8), gray (10YR 6/1), and red (2.5YR 4/8) sandy clay loam with bodies of heavier material; weak, medium, subangular blocky structure; firm; patchy clay films on faces of peds; very strongly acid (pH 5.0).

The solum is more than 60 inches thick. The A horizon is medium acid to strongly acid. The A horizon commonly is 6 to 9 inches thick but ranges from 6 to 14 inches. The Ap horizon generally is grayish brown or dark grayish brown but also includes dark gray, brown, pale brown, and light yellowish brown. It is 6 to 8 inches thick. The A2 horizon, if present, is pale-brown, brown, very pale brown, or light yellowish-brown fine sandy loam 2 to 7 inches thick. The B horizon is strongly acid to very strongly acid. The B2t horizon commonly is clay loam, loam, clay or silty clay loam more than 50 inches thick. The matrix color is yellowish brown, olive yellow, or light olive brown. The upper 10 to 12 inches generally is mottle free but occasionally has few pale-brown, yellowish-brown, or yellowish-red mottles. The lower part of the B2t horizon has common to many mottles of varying shades of gray, brown, and red. Mottles with chroma of 1 or 2 occur within a depth of 30 inches. The top 20 inches of this horizon contains more than 30 percent silt and from 18 to 35 percent clay. Clay content commonly increases to more than 35 percent at a depth of 30 to 36 inches. The B3 horizon is sandy clay loam, sandy clay, or clay loam, highly mottled with gray, brown, and red.

These soils contain about 25 percent fine sand or coarser particles in the upper 20 inches of the Bt horizon, but they are enough like the defined Exum soils in morphology, composition, and behavior to be classified in that series.

Exum soils are associated with Norfolk, Goldsboro, Varina, Duplin, and Coxville soils. Exum soils have more silt than these soils.

Exum sandy loam (Ex).—This soil is on broad, upland areas and on high terraces. Included in mapping are small areas of Duplin, Goldsboro, and Varina soils and areas of soils that have a surface layer of fine sandy loam. Also included are a few areas of Coxville soils less than 4 acres in size. These wet areas, commonly in depressions, are shown on the map by wet spot symbols.

This soil has moderately good tilth. Crops respond well to fertilizer and lime.

Most of the acreage is used for cultivated crops. Principal crops are cotton, tobacco, corn, soybeans, and small grain. Capability unit IIw-2; woodland group 2w8.

Faceville Series

The soils of the Faceville series are deep, well drained, and nearly level to strongly sloping. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown loamy sand about 8 inches thick. The subsurface layer is light yellowish-brown loamy sand about 4 inches thick. The next layer is friable sandy clay about 60 inches thick. The upper 24 inches is yellowish red, the next 18 inches is red, and the lower 18 inches is dominantly yellowish red.

Faceville soils are low in content of organic matter. Permeability is moderate, and runoff is medium to rapid. Available water capacity is medium.

Representative profile of Faceville loamy sand, 0 to 2 percent slopes, in a cultivated field in Sumter County, about 2 1/2 miles southwest of Pinewood, one-half mile north of intersection of dirt road and State Highway 52, and 400 feet east of dirt road:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; few small roots and pores; medium acid (pH 5.9); clear, smooth boundary.

A2—8 to 12 inches, light yellowish-brown (10YR 6/4) loamy sand; weak, fine granular structure; very friable; few small roots and pores; strongly acid (pH 5.4); clear, smooth boundary.

B21t—12 to 36 inches, yellowish-red (5YR 4/8) sandy clay; moderate, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; few fine roots; many fine pores; many clean quartz grains; strongly acid (pH 5.2); gradual, smooth boundary.

B22t—36 to 54 inches, red (2.5YR 4/8) sandy clay; weak, medium, subangular blocky structure; friable; patchy clay films on peds; few fine pores; many clean quartz grains; strongly acid (pH 5.2); gradual, smooth boundary.

B31t—54 to 62 inches, yellowish-red (5YR 4/8) sandy clay; few, fine, distinct, dark-red and strong-brown mottles; weak, medium, subangular blocky structure; friable; many clean quartz grains; few plinthite concretions; strongly acid (pH 5.1); gradual, smooth boundary.

B32t—62 to 72 inches, yellowish-red (5YR 5/8) sandy clay; few, fine, distinct, red and strong-brown mottles; weak, medium, subangular blocky structure; friable; many clean quartz grains; few, coarse, quartz gravel; strongly acid (pH 5.1).

The solum is more than 70 inches thick. The A horizon ranges from slightly acid to strongly acid and is 5 to 12 inches thick. It commonly is grayish brown, dark grayish brown, brown, or dark yellowish brown to a depth of 5 to 10 inches. In many cultivated areas the boundary between the Ap and Bt horizons is abrupt. In places there is an A2 horizon 2 to 7 inches thick that is pale-brown and light yellowish-brown loamy sand or sandy loam. The B horizon is medium acid to strongly acid. The Bt horizon generally is more than 60 inches thick. It is yellowish-red to red sandy clay, clay loam, or clay. The lower part is mottled with strong brown, yellowish brown, various shades of red, and other colors of high chroma.

Faceville soils are associated with Norfolk, Varina, Orangeburg, and Greenville soils. They have a redder subsoil than Norfolk and Varina soils and have a finer textured subsoil than Orangeburg soils. Faceville soils have a yellowish-red to red subsoil and Greenville soils have a dark-red subsoil.

Faceville loamy sand, 0 to 2 percent slopes (FaA).—This nearly level soil is on broad upland areas. It has the profile described as representative for the series.

Included with this soil in mapping are small areas of Varina, Greenville, and Orangeburg soils and small areas where slopes are 2 to 6 percent. Also included are areas of Coxville and Pantego soils in slight depressions. These small wet areas, commonly 1 to 4 acres in size, are shown on the soil map by wet spot symbols.

In Florence County this Faceville soil has a surface layer that is predominantly loamy fine sand or fine sandy loam, but this does not affect the management.

This soil is easily tilled. Crops respond well to fertilizer and lime. Most of the acreage is in row crops. Principal crops are cotton, tobacco, corn, and soybeans. Capability unit I-2; woodland group 3o1.

Faceville loamy sand, 2 to 6 percent slopes (FaB).—This soil is on broad ridges. Included in mapping are small areas of Greenville, Orangeburg, and Varina soils; small areas of soils that have slopes less than 2 percent and more than 6 percent; a few eroded areas where the plow layer contains a mixture of subsoil material; and a few small areas where the subsoil is exposed. A few low wet areas, less than 4 acres in size, are shown on the map by wet spot symbols. Also included are a few small areas in Sumter County that are underlain by fuller's earth at a depth of 36 to 50 inches. In Florence County most of this soil has a surface layer that is predominantly loamy fine sand or fine sandy loam.

Good tilth is easily maintained in most areas of this soil. In the small areas where the subsoil is exposed, the plow layer has fair to poor tilth. Crops respond well to fertilizer and lime.

About 85 percent of the acreage is cultivated. The rest is wooded. Principal crops are cotton, tobacco, corn, and soybeans. Capability unit IIe-2; woodland group 3o1.

Faceville loamy sand, 6 to 15 percent slopes (FaD).—This sloping to strongly sloping soil is on narrow, irregularly shaped upland areas. Included in mapping are small areas of Varina, Greenville, Orangeburg, and Sunsweet soils; some areas of soils that have slopes of 4 to 6 percent; and a few small areas where slopes are more than 15 percent. The subsoil is exposed in a few small areas, and there are a few shallow gullies. Also included are a few small areas in Sumter County underlain by fuller's earth at a depth of 36 to 50 inches.

On most areas of this soil tilth is good to fair, but where the subsoil is exposed, the plow layer has poor tilth.

Most of the acreage is wooded. Some areas are used for pasture. Erosion is the chief management concern. Capability unit IVe-1; woodland group 3o1.

Fuquay Series

The soils of the Fuquay series are deep, well drained, and nearly level to gently sloping. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown sand about 8 inches thick, and the subsurface layer is pale-brown loamy sand about 19 inches thick. The next layer is about 45 inches thick. The upper part is 8 inches of yellowish-brown sandy loam; the next 12 inches is yellowish-brown sandy clay loam; the next 13 inches is mottled yellowish-brown sandy clay loam that contains about 15 to 20 percent plinthite; and the lower part is 12 inches of mottled sandy clay loam that contains about 10 percent plinthite.

Fuquay soils are low in organic-matter content. Permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is slow. Available water capacity is low to medium.

Representative profile of Fuquay sand, 0 to 4 percent slopes, in a cultivated field in Florence County, about 4 miles west of Timmonsville, 650 feet west of intersection of State Highway 643 and U.S. Highway 76, and 100 feet north of U.S. Highway 76:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) sand; weak, fine, granular structure; very friable; common fine roots; common fine pores; few, hard sesquioxide nodules (6 to 10 millimeters in diameter); strongly acid (pH 5.5); clear, smooth boundary.

A2—8 to 27 inches, pale-brown (10YR 6/3) loamy sand; weak, medium, granular structure; very friable; few fine roots; common fine and medium pores; few, thin, horizontal, yellowish-brown bands; few, hard sesquioxide nodules (6 to 13 millimeters in diameter); strongly acid (pH 5.1); clear, smooth boundary.

B1—27 to 35 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; few fine roots; common fine and medium pores; few, hard sesquioxide nodules; few small areas of clean sand grains; very strongly acid (pH 4.7); gradual, wavy boundary.

B21t—35 to 47 inches, yellowish-brown (10YR 5/8) sandy clay loam; moderate, medium, subangular blocky structure; friable; continuous clay films on faces of peds; common fine and medium pores; few, soft, yellowish-red plinthite nodules; few, hard sesquioxide nodules; strongly acid (pH 5.1); gradual, wavy boundary.

B22t—47 to 60 inches, yellowish-brown (10YR 5/6) sandy clay loam; common, medium, distinct, strong-brown (7.5YR 5/6), light brownish-gray (10YR 6/2), and yellowish-red (5YR 4/8) mottles; moderate, medium, subangular blocky structure; friable; continuous clay films on faces of peds; common fine and medium pores; common, soft, brittle, plinthite nodules (15 to 20 percent by volume) with red centers; very strongly acid (pH 4.8); gradual, wavy boundary.

B23t—60 to 72 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay loam; weak, medium, subangular blocky structure; friable, patchy clay films on faces of peds; common, brittle, red, plinthite nodules (10 percent by volume); very strongly acid (pH 4.7).

The solum is more than 60 inches thick, and the entire profile is strongly acid to very strongly acid. The A horizon generally ranges from 22 to 32 inches thick. The Ap horizon is dark gray, dark grayish brown, grayish brown, or brown. The A2 horizon is pale-brown, very pale brown, or light yellowish-brown sand, loamy sand, or loamy fine sand 15 to 20 inches thick. A few hard sesquioxide nodules commonly are on the surface and throughout the A horizon. The B1 horizon is 3 to 11 inches thick. The Bt horizon is 30 to more than 50 inches thick. The top 10 to 15 inches is yellowish-brown or strong-brown sandy loam or sandy clay loam. The number of soft, yellowish-red to red plinthite nodules increases with depth. The lower part of the Bt horizon is sandy clay loam or sandy clay mottled with yellowish brown or strong brown, yellowish red, red, and varying shades of gray. Soft, brittle plinthite nodules (5 to 20 percent by volume) occur in this lower part at depths commonly between 48 and 60 inches.

Fuquay soils are associated with the Norfolk, Wagram, Pocalla, Lakeland, and Varina soils. Unlike the Norfolk, Wagram, Pocalla, and Lakeland soils, Fuquay soils contain more than 5 percent plinthite within a depth of 60 inches. Fuquay soils have a thicker surface layer than Norfolk and Varina soils, and they have Bt horizons which are lacking in Lakeland soils.

Fuquay sand, 0 to 4 percent slopes (FuB).—This is the only Fuquay soil mapped in the survey area. Included in mapping are a few small areas of Wagram, Pocalla, Lucy, Norfolk, and Varina soils and long, narrow areas of alluvial soils. Also included are areas of Coxville, Rains, and Pantego soils less than 4 acres in size. These wet areas, in depressions, are shown on the map by wet spot symbols.

This soil is easily tilled, and it can be cultivated over a wide range of moisture. Crops respond well to fertilizer and lime.

About 60 percent of the acreage is cropland and pasture. The rest is wooded. Principal crops are cotton, tobacco, corn, soybeans, Coastal bermudagrass, bahiagrass, and sericea lespedeza. The soil is slightly droughty during periods of low rainfall. Soil blowing is a hazard on some of the larger fields. Capability unit IIs-1; woodland group 3s2.

Goldsboro Series

The soils of the Goldsboro series are deep, moderately well drained, and nearly level. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark-gray loamy sand about 7 inches thick. The subsurface layer is pale-brown loamy sand about 8 inches thick. The next layer is sandy clay loam about 57 inches thick. The upper part is 8 inches thick and is yellowish brown; the next 29 inches is mottled yellowish brown with gray mottles beginning at a depth of about 28 inches; and the lower 20 inches is coarsely mottled.

Goldsboro soils are moderate in organic-matter content. Permeability is moderate, and runoff is slow to medium. Available water capacity is medium.

Representative profile of Goldsboro loamy sand in cultivated field in Florence County, about 4 miles east of Timmonsville, about 1.4 miles east of the junction of U.S. Highway 76 and State Highway 107, and 550 feet south of the State Highway:

Ap—0 to 7 inches, dark-gray (10YR 4/1) loamy sand; weak, fine, granular structure; very friable; many small grass roots; medium acid (pH 5.6); abrupt, smooth boundary.

A2—7 to 15 inches, pale-brown (10YR 6/3) loamy sand; weak, fine, granular structure; very friable; common small roots; common small and medium pores; strongly acid (pH 5.4); clear, smooth boundary.

B21t—15 to 23 inches, yellowish-brown (10YR 5/4) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; few small roots; many small and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

B22t—23 to 28 inches, yellowish-brown (10YR 5/4) sandy clay loam; common, medium, distinct mottles of strong brown (7.5YR 5/6) and few, fine, faint mottles of pale brown; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; many small and medium pores; very strongly acid (pH 4.8); gradual, wavy boundary.

B23t—28 to 52 inches, yellowish-brown (10YR 5/6) sandy clay loam; many, medium to coarse, distinct mottles of strong brown (7.5YR 5/6), light gray (10YR 7/1), and red (2.5YR 4/6); weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; many small pores; very strongly acid (pH 4.9); gradual, wavy boundary.

B24t—52 to 72 inches, mottled brownish-yellow (10YR 6/8), yellowish-brown (10YR 5/6), and gray (10YR 6/1) sandy clay loam; weak, medium, subangular blocky structure; friable; very strongly acid (pH 4.6).

The solum is more than 60 inches thick. The A horizon ranges from medium acid to strongly acid. The A horizon commonly ranges in thickness from 10 to 16 inches. The Ap horizon is 6 to 9 inches thick and is very dark gray, dark gray, dark grayish brown, or grayish brown. The darker colors are in wooded areas. The A2 horizon is 2 to 9 inches thick. It is loamy sand, sandy loam, or fine sandy loam in texture. Color of the A2 horizon is very pale brown, pale brown, light yellowish brown, or yellowish brown. The B horizon is strongly acid to very strongly acid. The B1 horizon is present in about half the profiles. Where it is present, it is sandy loam or sandy clay loam 2 to 6 inches thick. The color is light olive brown, olive brown, or yellowish brown. The Bt horizon is commonly yellowish-brown sandy clay loam or sandy loam, containing mottles of gray to red in the lower part of the horizon. Mottles indicating wetness are at depths of less than 30 inches. The Bt horizon is 30 to more than 40 inches thick.

The Goldsboro soils are associated with Norfolk, Duplin, Lynchburg, Rains, and Coxville soils. They are more poorly drained than Norfolk soils; better drained than Lynchburg, Rains, and Coxville soils; and have a coarser textured subsoil than Duplin soils.

Goldsboro loamy sand (Go).—This soil has the profile described as representative for the series. Included in mapping are small areas of Olanta, Lynchburg, and Duplin soils; small areas of Norfolk soil on the higher elevations; a few small areas of moderately well drained soils; and areas of Coxville and Rains soils up to 4 acres in size. These wet areas, in depressions, are shown on the map by wet spot symbols. In places this soil contains 5 to 10 percent, by volume, of soft plinthite within a depth of 60 inches.

About 30 percent of the acreage has a surface layer of loamy fine sand, sandy loam, or fine sandy loam, but these areas have similar management concerns.

Tilth of the soil is good. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. Principal crops are tobacco, cotton, corn, soybeans, truck crops, and small grain. This soil generally needs to be drained before it is suitable for crops. Capability unit IIw-2; woodland group 2w8.

Goldsboro Series, Moderately Deep Variant

The soils of the Goldsboro series, moderately deep variant, are nearly level and moderately well drained. They

formed in loamy Coastal Plain sediment. These soils are similar to other Goldsboro soils but are outside the series range, mainly because of their moderate depth.

In a representative profile the surface layer is dark-gray loamy sand about 8 inches thick. The next layer is 31 inches thick. The upper part is 5 inches of pale-brown fine sandy loam; the next 7 inches is mottled yellowish-brown sandy clay loam; the next 6 inches is mottled strong-brown sandy clay loam; and the lower part is 13 inches of mottled gray and strong-brown sandy clay loam. Broken, strongly cemented ironstone that has pockets of soil material between fragments is below a depth of about 39 inches.

Goldsboro soils, moderately deep variant, are moderate in content of organic matter. Permeability is moderate. Available water capacity is medium.

Most of the acreage is cultivated.

Representative profile of Goldsboro loamy sand, moderately deep variant, in a field in Sumter County, about 6 miles north of Sumter, one-half mile south of junction of U.S. Highway 15 and State Highway 105, and 550 feet east of U.S. Highway 15:

Ap—0 to 8 inches, dark-gray (10YR 4/1) loamy sand; weak, medium, granular structure; very friable; many fine roots; few medium fragments of ironstone on surface and in horizon; very strongly acid (pH 4.7); clear, smooth boundary.

B1t—8 to 13 inches, pale-brown (10YR 6/3) fine sandy loam; common, fine and medium, distinct mottles of yellowish brown (10YR 5/6), strong brown (7.5YR 5/8), and yellowish red (5YR 5/6); weak, medium, subangular blocky structure; friable; many fine roots; many fine pores; few medium fragments of ironstone; very strongly acid (pH 4.9); clear, smooth boundary.

B21t—13 to 20 inches, yellowish-brown (10YR 5/4) sandy clay loam; common, fine and medium, distinct mottles of strong brown (7.5YR 5/8), yellowish red (5YR 5/6), pale brown (10YR 6/3), and light gray (10YR 7/1); weak, medium, subangular blocky structure; friable; patchy, faint, clay films on faces of peds and in pores; common fine roots; many fine and medium pores; few medium fragments of ironstone; very strongly acid (pH 4.7); clear, smooth boundary.

B22t—20 to 26 inches, strong-brown (7.5YR 5/6) sandy clay loam; many, coarse, distinct, gray (10YR 6/1) mottles, and few, fine, distinct, pale-brown and yellowish-red mottles; weak, medium, subangular blocky structure; friable; patchy, faint, clay films on faces of peds and in pores and root channels; common fine roots; many fine and medium pores; few medium fragments of ironstone; very strongly acid (pH 4.6); clear, smooth boundary.

B23tg—26 to 39 inches, mottled gray (10YR 6/1) and strong-brown (7.5YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; few fine roots; many fine and medium fragments of ironstone; very strongly acid (pH 5.0); abrupt, irregular boundary.

R—39 to 50 inches, mostly strongly cemented ironstone containing pockets of soil material between fragments.

The solum ranges in thickness from 30 to 60 inches. The entire profile is strongly acid to very strongly acid. The A horizon is 6 to 18 inches thick. The Ap horizon is 6 to 8 inches thick and is dark gray, very dark gray, or dark grayish brown. The A2 horizon, if present, is loamy sand to loamy fine sand 3 to 10 inches thick. It is grayish brown, pale brown, or very pale brown. The B1t horizon is pale-brown, light yellowish-brown, or yellowish-brown sandy loam or fine sandy loam about 4 to 6 inches thick. The B2t horizon is sandy loam or sandy clay loam 20 to 40 inches thick. It is yellowish brown or strong brown containing gray, pale-brown, strong-brown, and yellowish-red mottles. A few plinthite nodules often occur in the lower half of the B2t horizon. A few fragments of ironstone commonly are on the surface and throughout the profile. The number increases in the lower part of the Bt horizon. The horizon is underlain by a broken or discontinuous layer of strongly cemented ironstone that contains pockets of soil material between fragments. Depth to this layer is 30 to 60 inches.

Goldsboro soils, moderately deep variant, commonly are adjacent to Norfolk; Norfolk, moderately deep variant; Lynchburg; Rains; Rains, moderately deep variant; and Coxville soils. Goldsboro soils are not so well drained as Norfolk soils and Norfolk soils, moderately deep variant, but are better drained than Lynchburg; Rains; Rains, moderately deep variant; and Coxville soils. They have a thinner solum than Norfolk, Lynchburg, Rains, and Coxville soils, all of which lack the cemented ironstone layers.

Goldsboro loamy sand, moderately deep variant (Gp).—This soil is on smooth areas in Sumter County. It has the profile described as representative for the series. At depths ranging from 30 to 60 inches, there is a layer of ironstone. This layer is not continuous, but it occurs in about 80 percent of the areas of this soil.

Included with this soil in mapping are small areas of Goldsboro and Lynchburg soils that have a surface layer and subsoil with a combined thickness of more than 60 inches. Also included are a few areas of Rains soils, a few small areas of soils that have a sandy clay subsoil, a few that have a sandy loam subsoil underlain by ironstone, and areas that have a loamy fine sand surface texture.

This soil has good tilth. Drainage is required for the production of crops, and drainage is often hampered by the ironstone that is near the surface. Crops respond well to fertilizer and lime.

Most of the acreage is cultivated or used for pasture. Principal crops are corn, soybeans, cotton, tobacco, and small grain. Capability unit IIw-2, woodland group 2w8.

Greenville Series

The soils of the Greenville series are nearly level to sloping, deep, and well drained. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is dark-brown loamy sand about 10 inches thick. Below the surface layer is dark-red, friable sandy clay and clay about 74 inches thick.

Greenville soils are low in content of organic matter. Permeability is moderate, and runoff is slow to medium. Available water capacity is medium.

Most of the acreage is used for cultivated crops, but some of the steeper areas are wooded.

Representative profile of Greenville loamy sand, 0 to 2 percent slopes, in a cultivated area in Sumter County, 2.4 miles southeast of intersection of U.S. Highway 76 and State Highway 261, and 150 feet west of county dirt road:

Ap—0 to 10 inches, dark-brown (10YR 4/3) loamy sand; pale-brown (10YR 6/3) when dry; weak, fine, granular structure; very friable; many fine roots; medium acid (pH 6.0); abrupt, smooth boundary.

B21t—10 to 18 inches, dark-red (10R 3/6) sandy clay; weak, medium, subangular blocky structure; friable; hard; sticky and plastic; common fine roots; few medium pores; sand grains coated and bridged with clay; slightly acid (pH 6.2); gradual, smooth boundary.

B22t—18 to 34 inches, dark-red (10R 3/6) clay; moderate, medium, subangular blocky structure; friable; hard; sticky and plastic; thin patchy clay films on faces of peds; common fine roots; few fine and medium pores; common, medium, shiny, quartz sand grains; slightly acid (pH 6.1); diffuse, wavy boundary.

B23t—34 to 51 inches, dark-red (10R 3/6) sandy clay; moderate, medium, subangular blocky structure; friable; hard; sticky and plastic; clay films on most faces of peds; few to common fine roots; few fine pores; common, medium, shiny, quartz sand grains; few charcoal fragments; strongly acid (pH 5.1); diffuse, smooth boundary.

B24t—51 to 60 inches, dark-red (10R 3/6) sandy clay containing a few, fine, distinct, yellowish-brown mottles; weak to moderate, medium, subangular blocky structure; friable; hard; sticky and plastic; thin patchy clay films on some faces of peds; common, medium, shiny, quartz sand grains; very strongly acid (pH 4.9); diffuse, smooth boundary.

B25t—60 to 84 inches, dark-red (10R 3/6) sandy clay; weak, medium, subangular blocky structure; friable; hard; sticky and plastic; thin patchy clay films on some faces of peds; common, medium, shiny, quartz sand grains; strongly acid (pH 5.1).

The solum is more than 72 inches thick. The upper 30 to 40 inches of the profile is slightly acid to strongly acid. The rest is strongly acid to very strongly acid. The A horizon commonly ranges from 4 to 10 inches in thickness and is brown, dark brown, reddish brown, or dark reddish brown in color. On the more eroded areas, the Ap horizon is redder. Texture of the A horizon generally is loamy sand or sandy loam, but in a few areas it is loamy fine sand or fine sandy loam. In places there is a reddish-yellow or reddish-brown loamy sand or loamy fine sand A2 horizon 5 to 7 inches thick. The Bt horizon is sandy clay or clay and is 60 to more than 80 inches thick.

Greenville soils are associated with Red Bay, Faceville, Orangeburg, and Lucy soils. They have a finer textured subsoil than Red Bay, Orangeburg, and Lucy soils, and they are darker red than Faceville soils.

Greenville loamy sand, 0 to 2 percent slopes (GrA).—This nearly level soil is on broad, upland areas. It has the profile described as representative for the series.

Included with this soil in mapping are small areas of Faceville, Red Bay, and Orangeburg soils; a few small areas where slopes are 2 to 4 percent; and small areas of Coxville and Pantego soils that are in low areas 1 to 4 acres in size. These small wet areas are shown on the map by wet spot symbols. Also included are a few areas of soils that have a loamy fine sand surface layer.

Good tilth can be maintained easily in the plow layer. The soil can be worked throughout a wide range of moisture content without crusting or clodding. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. Principal crops are cotton, corn, soybeans, peanuts, and small grain. Capability unit I-2; woodland group 3o1.

Greenville loamy sand, 2 to 6 percent slopes (GrB).—This gently sloping soil is on uplands. Included in mapping are a few small areas of Faceville, Varina, Orangeburg, and Red Bay soils; areas where the plow layer extends into the upper subsoil; small areas where the sandy clay subsoil is exposed; and small areas where slopes are less than 2 percent or are 6 to 8 percent. Small, low, wet areas, less than 4 acres in size, are also included and are shown on the map by wet spot symbols. A few included areas have a loamy fine sand surface layer.

Tilth of the soil is good in most areas. In the areas where the plow layer extends into the subsoil, good tilth is more difficult to maintain. Crops respond well to fertilizer and lime.

Most of the acreage is cultivated. Principal crops are cotton, corn, soybeans, peanuts, and small grain. Erosion is the chief management concern. Capability unit IIe-2; woodland group 3o1.

Greenville loamy sand, 6 to 10 percent slopes (GrC).—This sloping soil is on narrow, irregularly shaped areas. Included in mapping are small areas of Faceville, Varina, Orangeburg, and Sunsweet soils. In places the sandy surface layer is less than 4 inches thick, and in other places the subsoil is exposed on small areas. Also included are a few small areas where slopes are 4 to 6 percent and other areas where slopes are 10 to 12 percent.

Tilth is good in most areas of this soil. In the areas where the plow layer extends into the subsoil, good tilth is more difficult to maintain. Crops respond well to fertilizer and lime.

Most of the acreage is wooded. Cultivated fields are small and irregular in shape. The principal crops are cotton, corn, soybeans, and small grain. Erosion is the chief management concern. Capability unit IIIe-2; woodland group 3o1.

Greenville sandy loam, 0 to 2 percent slopes (GsA).—This nearly level soil has a profile similar to that described as representative for the series, but it has a sandy loam surface layer.

Included with this soil in mapping are small areas of Faceville, Red Bay, and Orangeburg soils; small areas where slopes are 2 to 4 percent; and a few small, low areas, 1 to 4 acres in size, shown on the map by wet spot symbols. Also included are a few areas of soils that have a fine sandy loam surface layer.

Tilth of this soil generally is good. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. The principal crops are cotton, corn, soybeans, peanuts, and small grain. Capability unit I-2; woodland group 3o1.

Greenville sandy loam, 2 to 6 percent slopes (GsB).—This gently sloping soil has a profile similar to that described as representative for the series, but it has a sandy loam surface layer.

Included with this soil in mapping are a few small areas of Red Bay, Faceville, and Orangeburg soils; areas where the plow layer extends into the upper subsoil; and a few small patches where the subsoil is exposed. Also included are small areas where slopes are less than 2 percent or are 6 to 8 percent. There are a few low areas, 1 to 4 acres in size, that are shown on the map by wet spot symbols. A few included areas have soils with a fine sandy loam surface layer.

Tilth of this soil is generally good. Crops respond well to fertilizer and lime.

Most of the acreage is cultivated. The principal crops are cotton, corn, soybeans, and small grain. Erosion is the chief management concern. Capability unit IIe-2; woodland group 3o1.

Hyde Series

The soils of the Hyde series are nearly level and very poorly drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is black loam about 10 inches thick. The next layer is about 64 inches thick. The upper 12 inches is black loam; the next 42 inches is friable silt loam that is black in the upper part grading to mottled dark gray in the lower part; and the lower 10 inches is mottled, very dark gray, firm clay loam.

Hyde soils are high in content of organic matter. Permeability is moderately slow. Runoff is ponded or very slow, and available water capacity is medium.

Representative profile of Hyde loam in an idle field in city of Sumter, 500 feet south of U.S. Highway 401, and 150 feet east of Commerce Street:

Ap—0 to 10 inches, black (N 2/0) loam; weak, medium, granular structure; friable; many fine and medium roots; many fine and medium pores; strongly acid (pH 5.3); clear, smooth boundary.

B1tg—10 to 22 inches, black (N 2/0) loam; moderate, medium, subangular blocky structure; friable; patchy clay films on faces of peds and in pores; many fine and medium roots; many fine and medium pores; very strongly acid (pH 4.8); gradual, smooth boundary.

B21tg—22 to 35 inches, black (10YR 2/1) silt loam; moderate, medium, angular blocky structure; friable; slightly sticky; patchy clay films on faces of peds and in pores; many fine and medium roots; many fine and medium pores; very strongly acid (pH 4.7); clear, smooth boundary.

B22tg—35 to 52 inches, very dark gray (10YR 3/1) silt loam; moderate, medium, angular blocky structure; friable; slightly sticky; patchy clay film on faces of peds and in pores; few fine roots; many fine and medium pores; very strongly acid (pH 4.7); gradual, smooth boundary.

B23tg—52 to 64 inches, dark-gray (10YR 4/1) silt loam; common, coarse, distinct, brownish-yellow (10YR 6/8) mottles and

many, fine, distinct, brown mottles; moderate, medium, angular blocky structure; friable; slightly sticky; patchy clay films on surface of peds and in pores; few fine roots; common fine and medium pores; very strongly acid (pH 4.6); gradual, smooth boundary.

B3tg—64 to 74 inches, very dark gray (10YR 3/1) clay loam; many, coarse, distinct, brownish-yellow (10YR 6/8) mottles and few, fine, prominent, red mottles; moderate, medium, angular blocky structure; firm; slightly sticky and plastic; patchy clay films on surface of peds and in pores; common fine pores; common small pockets of white sand throughout horizon; very strongly acid (pH 4.5).

The solum is more than 60 inches thick. The soil is strongly acid to very strongly acid throughout the profile. The Ap horizon is black or very dark gray and 10 inches or more in thickness. The A horizon is black or very dark gray and is 7 to 18 inches thick. The Bt horizon is black, very dark gray, dark gray, or gray loam, silt loam, and clay loam. It commonly is more than 50 inches thick. In some profiles the Bt horizon has few to common mottles of higher chroma. The upper 20 inches of the Bt horizon averages 18 to 35 percent clay and more than 30 percent silt. The B3 horizon is sandy loam, silt loam, or clay loam commonly 8 to 18 inches thick. It is very dark gray or gray, and in places has few to common mottles of higher chroma.

Hyde soils commonly are associated with Goldsboro, Lynchburg, Duplin, Rains, Pantego, and Coxville soils. They are more poorly drained than Goldsboro, Lynchburg, Duplin, and Coxville soils and have more silt in the subsoil than Pantego soils.

Hyde loam (Hy).—This is the only Hyde soil mapped in the survey area. It is in low areas along drainageways, in oval-shaped bays, and on broad flats.

Included with this soil in mapping are small areas of Pantego, Coxville, and Rains soils; a few areas of soils that have a clayey subsoil; and a few areas of soils that have a silt loam surface layer.

If drained, Hyde soils respond to good management. About 85 percent of the acreage is wooded. The rest is cropland or pasture. The principal crops are corn, oats, soybeans, and pasture grasses. Drainage is needed on this soil for good plant growth. Capability unit IIIw-4; woodland group 1w9.

Irvington Series

The soils of the Irvington series are nearly level to sloping, moderately deep to a fragipan, and moderately well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown loamy sand about 7 inches thick. The subsurface layer is light yellowish-brown loamy sand about 8 inches thick. The next layer is brownish-yellow, friable sandy clay loam about 11 inches thick. Below this layer is about 26 inches of firm, brittle, sandy clay loam that contains plinthite; it is mottled brownish yellow in the upper part and coarsely mottled gray and red in the lower part. The underlying material is mottled light gray, grading to mottled gray as depth increases; it is sandy clay loam in about the upper 10 inches and sandy loam in about the lower 18 inches.

Irvington soils are low in content of organic matter. Permeability is slow in the fragipan. Runoff is slow to rapid, and available water capacity is low.

Representative profile of Irvington loamy sand, 2 to 6 percent slopes, in a field in Sumter County, 0.8 mile north of Gaillard Crossroads and thirty feet east of State Highway 43:

A1—0 to 7 inches, grayish-brown (2.5Y 5/2) loamy sand; weak, fine, granular structure; very friable; common, coarse, quartz grains on the surface and in the horizon; few, small, hard, brown concretions on the surface; few, small, rounded and angular, quartz gravel; many fine roots; medium acid (pH 5.7); abrupt, smooth boundary.

A2—7 to 15 inches, light yellowish-brown (2.5Y 6/4) loamy sand; weak, fine, granular structure; very friable; few fine roots; strongly acid (pH 5.5); clear, smooth boundary.

B2t—15 to 26 inches, brownish-yellow (10YR 6/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; few fine roots; many fine pores; few coarse quartz grains; very strongly acid (pH 4.8); clear, smooth boundary.

Bx1—26 to 34 inches, brownish-yellow (10YR 6/6) sandy clay loam; common, medium, prominent, red (2.5YR 5/8) mottles and few, medium, faint, yellowish-brown (10YR 5/8) mottles; moderate, medium, angular blocky to platy structure; firm, brittle, and hard; continuous clay films on faces of peds; few fine roots; few fine pores; about 8 percent plinthite; few coarse quartz grains; red mottles increase in number and size with depth; few mica flakes; very strongly acid (pH 4.7); gradual, smooth boundary.

Bx2—34 to 39 inches, brownish-yellow (10YR 6/6) sandy clay loam; common, medium, prominent, red (2.5YR 5/8) mottles, few, medium, faint, yellowish-brown (10YR 5/8) mottles, and common, medium, distinct, light-gray (2.5Y 7/2) mottles; moderate, medium, subangular blocky to platy structure; firm, brittle, and hard; continuous clay films on faces of peds; few fine pores; 8 to 10 percent plinthite; few coarse quartz grains; red and gray mottles increase in number and size with depth; few mica flakes; very strongly acid (pH 4.7); gradual, wavy boundary.

Bx3—39 to 52 inches, coarsely mottled gray (10YR 6/1) and red (2.5YR 4/8) sandy clay loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles; massive; firm; red parts are brittle; concretions of dusky-red (10R 3/4) plinthite; few mica flakes; very strongly acid (pH 4.6); gradual, smooth boundary.

C1g—52 to 62 inches, light-gray (10YR 7/1) sandy clay loam; common, medium, distinct, brown (10YR 5/3) and yellow (10YR 7/6) mottles, and few, medium, prominent, red (2.5YR 4/8) mottles; massive; gray is slightly firm; mottles are friable; few mica flakes; very strongly acid (pH 4.6); gradual, smooth boundary.

C2g—62 to 70 inches, light-gray (10YR 7/1) sandy loam; common, medium, distinct, pale-brown (10YR 6/3) mottles, and few, medium, prominent, strong-brown (7.5YR 5/8) and red (2.5YR 4/8) mottles; massive; gray is slightly firm; mottles are friable; few mica flakes; very strongly acid (pH 4.8); clear, smooth boundary.

C3g—70 to 80 inches, gray (10YR 6/1) sandy loam; pockets of sandy clay loam; common, medium, distinct, pale-brown (10YR 6/3) mottles, and few, medium, prominent, strong-brown (7.5YR 5/8) and yellowish-red (5YR 4/8) mottles; massive; friable; pockets of sandy clay loam are firm; many mica flakes; clean, coarse sand grains; very strongly acid (pH 4.7).

The solum ranges in thickness from about 50 to more than 60 inches. Depth to the fragipan commonly is 20 to 40 inches. The A horizon is medium acid to strongly acid and is 3 to 18 inches thick. Few to common small, hard, iron concretions, quartz gravel, and fragments of ferruginous sandstone in places are scattered over the surface and throughout the A horizon. The Al or Ap horizon is 3 to 8 inches thick and is dark grayish brown, grayish brown, or brownish gray. The A2 horizon is pale-brown, very pale brown, or light yellowish-brown loamy sand or sand 5 to 12 inches thick. The B horizon is strongly acid to very strongly acid. The Bt horizon is 8 to 30 inches thick. Color is brownish yellow, yellowish brown, or strong brown. In many places the lower part of the Bt horizon is mottled with light yellowish brown, strong brown, yellowish red, red, and gray. The Bx horizon is brownish-yellow, yellowish-brown, or strong-brown sandy clay loam or sandy clay with common to many mottles of yellow, brown, red, and gray. In most places it is 20 to 30 inches thick and is weakly to strongly cemented and brittle. Plinthite ranges from about 5 to 15 percent in the Bx horizon. The C horizon is mottled red, brown, yellow, and gray. It ranges from loamy sand to sandy clay.

Irvington soils are associated with Vaucluse, Norfolk, Wagram, Troup, Lakeland, and Kershaw soils. The fragipans containing over 5 percent plinthite that occur in Irvington soils are not present in Vaucluse, Norfolk, Wagram, Troup, Lakeland, and Kershaw soils.

Irvington loamy sand, 0 to 2 percent slopes (IrA).—Included with this soil in mapping are small areas of Wagram and Norfolk soils; areas of soils that have sandy clay in the upper part of the subsoil; and soils that have less than 5 percent plinthite in the fragipan. Also included are a few areas where slopes are 2 to 6 percent and areas where the surface layer is sand or sandy loam.

This soil has good tilth, and it can be worked throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

Most of the acreage is in cultivated crops or pasture. The principal crops are cotton, corn, soybeans, small grain, bahiagrass, Coastal bermudagrass, and sericea lespedeza. Capability unit IIw-5; woodland group 2o7.

Irvington loamy sand, 2 to 6 percent slopes (IrB).—This gently sloping soil has the profile described as representative for the series. Included are small areas of Wagram, Vaucluse, and Norfolk soils. Also included are a few areas of eroded soils where the sandy surface layer is less than 6 inches thick and a few small areas where the subsoil is exposed. Some small areas of soils that have a sandy clay texture in the upper part of the subsoil and less than 5 percent plinthite in the fragipan; a few small areas where slopes are 6 to 8 percent; and a few areas of soils that have a sand or sandy loam surface layer are also included.

Except in the few eroded areas, tilth is good on this soil. Crops respond well to fertilizer and lime.

About 75 percent of the acreage is in cultivated crops or pasture. The rest is wooded. Principal crops are cotton, corn, soybeans, and small grain. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are the principal pasture and hay crops. Erosion is a hazard on this soil. Capability unit IIe-4; woodland group 2o7.

Irvington loamy sand, 6 to 10 percent slopes (IrC).—Included with this soil are small areas of Wagram, Vaucluse, and Sunsweet soils; a few eroded areas where the sandy surface layer is less than 6 inches thick; and a few small areas where the subsoil is exposed. Some areas of soils that have a sandy clay texture in the upper part of the subsoil and less than 5 percent plinthite in the fragipan, and a few small areas where slopes are 4 to 6 percent are also included.

Tilth generally is good on this soil except on the few eroded areas. Crops respond well to fertilizer and lime.

About 80 percent of the acreage is wooded. The rest is cultivated or in pasture. Principal crops are corn, soybeans, bahiagrass, Coastal bermudagrass, and sericea lespedeza. Erosion is a severe hazard. Capability unit IIIe-4; woodland group 2o7.

Irvington loamy sand, 6 to 10 percent slopes, eroded (IrC2).—This soil has a profile similar to that described as representative for the series, but the surface layer is only 3 to 5 inches thick.

Included with this soil in mapping are small areas of Wagram, Vaucluse, and Sunsweet soils; areas where the subsoil is exposed; a few small areas of soils that have a sandy surface layer 5 to 12 inches thick; and small areas of soils that have a sandy clay texture in the upper part of the subsoil and less than 5 percent plinthite in the fragipan. A few small areas where slopes are 4 to 6 percent are also included.

The plow layer has fair to poor tilth.

About 90 percent of the acreage is wooded. The rest is cultivated or in pasture. Capability unit IVe-4; woodland group 2o7.

Johns Series

The soils of the Johns series are nearly level, moderately deep to a sandy substratum, friable, and moderately well drained. They formed in loamy sediment on the terraces along the larger streams.

In a representative profile the surface layer is dark grayish-brown fine sandy loam about 8 inches thick. The subsurface layer is pale-brown fine sandy loam about 5 inches thick. The next layer is about 28 inches thick. The upper 22 inches is sandy clay loam that is yellowish brown in the upper part and mottled yellowish brown and gray in the lower part; the lower 6 inches is mottled yellowish-brown and gray sandy loam. The underlying material is brownish-yellow and pale-brown coarse sand.

Johns soils are low in organic-matter content. Permeability is moderate. Runoff is slow, and available water capacity is medium.

Representative profile of Johns fine sandy loam in a cultivated field in Florence County, 3 miles east of Coward, 150 feet west of intersection of State Highways 46 and 72, and 200 feet north of State Highway 46:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, medium, granular structure; very friable; many fine roots; strongly acid (pH 5.3); abrupt, smooth boundary.

A2—8 to 13 inches, pale-brown (10YR 6/3) fine sandy loam; weak, medium, granular structure; very friable; few fine roots; common fine and medium pores; medium amount of Ap horizon material in this horizon through root channels, pores, and wormholes; strongly acid (pH 5.3); clear, smooth boundary.

B21t—13 to 21 inches, yellowish-brown (10YR 5/4) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy thin clay films on faces of peds; few fine roots; common fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

B22t—21 to 35 inches, mottled yellowish-brown (10YR 5/6) and gray (10YR 6/1) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy thin clay films on faces of peds; few fine roots; common fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

B3—35 to 41 inches, mottled yellowish-brown (10YR 5/4 and 10YR 5/6) and gray (10YR 6/1) sandy loam containing lenses of finer and coarser material; weak, medium, subangular blocky structure; friable; very strongly acid (pH 4.9); gradual, wavy boundary.

IIC—41 to 60 inches, brownish-yellow (10YR 6/6) and pale-brown (10YR 6/3) coarse sand; single grained; loose; color becomes lighter as depth increases; strongly acid (pH 5.5).

The solum ranges from 30 to 44 inches in thickness. The soil is strongly acid to very strongly acid throughout the profile. Thickness of the A horizon ranges from 5 to 19 inches. The surface layer is 5 to 9 inches thick and is dark gray, dark grayish brown, grayish brown, or brown. The A2 horizon, where present, is 2 to 11 inches thick and is pale brown, light yellowish brown, brown, or yellowish brown. The B1 horizon, if present, is pale-brown, light yellowish-brown, or yellowish-brown sandy loam or sandy clay loam 3 to 8 inches thick. The Bt horizon is 14 to 30 inches thick. The upper part is yellowish brown or strong brown, and the lower part is brownish yellow, yellowish brown, or brown mottled with gray, pale brown, yellowish red, and red. Few to many mottles with chroma of 2 or less are within 24 inches of the top of the Bt horizon. Texture of the Bt horizon is sandy loam, sandy clay loam, or clay loam. The B3 horizon is commonly 4 to 10 inches thick. It is mottled yellowish brown, gray, strong brown, yellow, yellowish red, and pale brown. Depth to the C horizon ranges from 30 to 44 inches. It is mottled pale brown, light gray, white, brownish yellow, and yellowish brown. The C horizon commonly is sand but is loamy sand in places.

Johns soils are associated with Kalmia, Cahaba, Kenansville, Wahee, and Leaf soils. They are more poorly drained than Kalmia, Cahaba, and Kenansville soils and have thinner surface and subsurface layers than Kenansville soils. Johns soils have a coarser textured subsoil than Wahee and Leaf soils and are better drained.

Johns fine sandy loam (Jo).—This soil is on terraces along the larger streams.

Included in mapping are areas of Kalmia, Cahaba, and Wahee soils; areas where the combined thickness of surface layer and subsoil is 44 to 50 inches; and areas 1 to 3 acres in size that are poorly drained. These poorly drained areas are shown on the map by wet spot symbols. Also included are a few areas of soils that have a sandy loam subsoil ranging in

clay content from 14 to 18 percent, and a few areas of soils that have a sandy loam or loamy sand surface layer.

Good tilth is easily maintained on this soil. Crops respond well to fertilizer and lime.

About 70 percent of the acreage is in row crops. The principal crops are tobacco, cotton, corn, soybeans, small grain, and pasture grasses. Capability unit IIw-2; woodland group 2w2.

Johnston Series

The soils of the Johnston series are nearly level and very poorly drained. They formed in stream deposits of loamy and sandy sediment. These soils are subject to stream overflow and are covered by standing water for long periods.

In a representative profile the surface layer is very dark gray mucky loam in the upper 9 inches and very dark gray sandy loam in the lower 17 inches. The surface layer is high in content of organic matter. The next layer is very dark gray fine sandy loam about 11 inches thick. The underlying material is gray fine sand.

Permeability is moderately rapid to rapid but is impeded by a high water table. Runoff is very slow. Available water capacity is medium.

These soils are not mapped separately but are mapped in an undifferentiated unit. Almost all of the acreage is wooded.

Representative profile of Johnston mucky loam in a creek bottom in Florence County, 1 mile west of Florence, and 350 feet south of U.S. Highway 76:

A11—0 to 9 inches, very dark gray (10YR 3/1) mucky loam, high in content of organic matter; massive; very friable; many fine roots; water table at a depth of 7 inches; very strongly acid (pH 4.6); clear, smooth boundary.

A12—9 to 26 inches, very dark gray (10YR 3/1) sandy loam, high in content of organic matter; massive; very friable; common fine roots; brown stains around decaying organic matter; lumps of decomposed organic matter; very strongly acid (pH 4.6); gradual, wavy boundary.

AC—26 to 37 inches, very dark gray (10YR 3/1) fine sandy loam; massive; very friable; few strata of sand; few old roots; strongly acid (pH 5.1); clear, wavy boundary.

IIC1—37 to 45 inches, gray (10YR 6/1) fine sand; single grained; loose; few old roots; strongly acid (pH 5.2); gradual, wavy boundary.

IIC2—45 to 70 inches, gray (10YR 6/1) fine sand; single grained; loose; few strata of loamy sand; few old roots; strongly acid (pH 5.1).

The soil is strongly acid to very strongly acid throughout the profile. The A horizon commonly is 25 to 35 inches thick, and it ranges in color from black to very dark gray. Texture of the A horizon is loam, silt loam, sandy loam, and fine sandy loam. Throughout the horizon, the content of organic matter is high. In places on the surface, there is a layer of muck and partly decomposed organic matter 6 to 8 inches thick. The C horizon is dark gray, gray, or light gray. The upper part ranges from loam to sand, and commonly is stratified with sandy loam and sand. At depths below 40 inches, the C horizon commonly is sandy but ranges in texture from sand to sandy clay loam.

Johnston soils are associated with Rutlege, Pantego, Osier, and Wehadkee soils. They have a thicker black or very dark gray surface layer than Rutlege, Pantego, Osier, and Wehadkee soils.

Kalmia Series

The soils of the Kalmia series are nearly level, moderately deep to a sandy substratum, and well drained. They are mainly on terraces along the larger streams. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown loamy sand about 8 inches thick. The subsurface layer is pale-brown sandy loam about 8 inches thick. The next layer is yellowish brown and about 21 inches thick; it is sandy clay loam in the upper part and sandy loam in the lower part. Below this layer is about 4 inches of yellowish-brown loamy coarse sand. Below this is brownish-yellow sand grading to light yellowish-brown and light-gray sand that becomes coarser as depth increases.

Kalmia soils are low in content of organic matter. Permeability is moderate. Runoff is slow to medium and available water capacity is medium.

Representative profile of Kalmia loamy sand in a cultivated field in Florence County, about 5 miles northwest of Coward, and 1½ miles southeast of Cusaac Crossroads:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, medium, granular structure; very friable; many fine roots; medium acid (pH 5.9); abrupt, smooth boundary.

A2—8 to 16 inches, pale-brown (10YR 6/3) sandy loam; weak, medium, granular structure; very friable to slightly compact; common fine roots; common fine and medium pores; medium acid (pH 5.6); clear, wavy boundary.

B2t—16 to 27 inches, yellowish-brown (10YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on ped faces and in pores and root holes; few fine roots; common fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

B3—27 to 37 inches, yellowish-brown (10YR 5/6) sandy loam; many, coarse, distinct, strong-brown (7.5YR 5/6) mottles; color pattern for this horizon is not continuous horizontally, in places the strong brown is dominant; weak, medium, subangular blocky structure; friable; few fine roots; many fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

IIC1—37 to 41 inches, yellowish-brown (10YR 5/6) loamy coarse sand; single grained; loose; very strongly acid (pH 5.0); clear, wavy boundary.

IIIC2—41 to 72 inches, brownish-yellow (10YR 6/6) sand, grading with depth to light yellowish brown (10YR 6/4) and light gray (10YR 7/2); sand becomes coarser as depth increases; single grained; loose; strongly acid (pH 5.5).

The solum ranges from 30 to 40 inches in thickness. The A horizon is medium acid to strongly acid. The A horizon generally is 10 to 16 inches thick. The Ap horizon is dark grayish brown, grayish brown, or brown. The A2 horizon is pale-brown, light yellowish-brown, or brown loamy sand, sandy loam, or fine sandy loam 5 to 8 inches thick. The B horizon is strongly acid to very strongly acid. The B1 horizon, if present, is 2 to 7 inches of yellowish-brown sandy loam. The Bt horizon commonly is 10 to 22 inches thick and is yellowish-brown or strong-brown sandy clay loam, sandy loam, or clay loam. The B3 horizon is 4 to 14 inches thick and commonly is brownish yellow or yellowish brown in color. The C horizon is very pale brown, pale-brown, light yellowish-brown, brownish-yellow, or yellowish-brown sand or loamy sand containing gray, yellow, and white mottles.

The clay content in the Bt horizon averages about 17.5 percent. This is a slightly lower percentage than is defined for the series, but this difference does not alter the usefulness and behavior of the soils.

Kalmia soils are associated with Cahaba, Johns, Kenansville, Lakeland, and Wahee soils. They have a yellower subsoil than Cahaba soils and a thinner surface layer and subsurface layer than Kenansville soils. They are better drained than Johns and Wahee soils and have Bt horizons in the subsoil that are lacking in Lakeland soils. Kalmia soils have less clay in their subsoil than Wahee soils.

Kalmia loamy sand (Ka).—This is the only Kalmia soil mapped in the survey area. Included in mapping are a few areas of Cahaba, Johns, Norfolk, and Kenansville soils; a few long, narrow areas where slopes are 2 to 4 percent; and some areas of soils where the combined thickness of the surface and subsurface layers ranges from 40 to 55 inches.

Good tilth is easily maintained on this soil. Crops respond well to fertilizer and lime.

Most of the acreage is cultivated. Principal crops are tobacco, cotton, corn, and soybeans. Capability unit I-1; woodland group 2o7.

Kenansville Series

The soils of the Kenansville series are on terraces along the larger streams. They are nearly level to gently sloping,

moderately deep to a sandy substratum, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown sand about 8 inches thick. The subsurface layer is pale-brown sand about 12 inches thick. The next layer, about 20 inches thick, is strong-brown sandy loam in the upper 12 inches, and yellowish-brown loamy sand in the lower 8 inches. The underlying material is sand. It is dominantly yellowish brown and strong brown in the upper 21 inches, and dominantly very pale brown in the lower 11 inches.

Kenansville soils are low in content of organic matter. Permeability is moderately rapid and runoff is slow. Available water capacity is low.

Representative profile of Kenansville sand, 0 to 4 percent slopes, in an idle field 8 miles southeast of Florence, one-third mile north of intersection of State Highways 13 and 327, and 0.4 mile west of State Highway 327:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) sand; weak, fine, granular structure; very friable; common fine roots; very strongly acid (pH 4.9); abrupt, smooth boundary.

A2—8 to 20 inches, pale-brown (10YR 6/3) sand; weak, fine, granular, structure; very friable; few fine and medium roots; very strongly acid (pH 4.9); gradual, wavy boundary.

B2t—20 to 32 inches, strong-brown (7.5YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few fine and medium roots; common fine pores; very strongly acid (pH 4.9); gradual, wavy boundary.

B3—32 to 40 inches, yellowish-brown (10YR 5/6) loamy sand; weak, medium, granular structure; very friable; strongly acid (pH 5.1); gradual, wavy boundary.

C1—40 to 50 inches, yellowish-brown (10YR 5/6) and very pale brown (10YR 7/3) sand; single grained; loose; strongly acid (pH 5.2); gradual, wavy boundary.

C2—50 to 61 inches, strong-brown (7.5YR 5/8) coarse sand; common, medium, distinct, very pale brown (10YR 7/4) mottles and few, fine, distinct, yellowish-red mottles; single grained; loose; strongly acid (pH 5.5); gradual, wavy boundary.

C3—61 to 72 inches, very pale brown (10YR 7/3) coarse sand; few, fine distinct, yellowish-red mottles; single grained; loose; medium acid (pH 5.7).

The solum commonly ranges from 31 to 40 inches in thickness. Reaction is medium acid to very strongly acid throughout the profile. The A horizon is 20 to 36 inches thick. The Ap or Al horizon is 4 to 10 inches thick. The A2 horizon ranges in thickness from 10 to 26 inches and is very pale brown, pale brown, light yellowish brown, or yellowish brown. The Bt horizon ranges in thickness from 6 to 24 inches. Color of the Bt horizon is yellowish brown or strong brown. Texture of the Bt horizon commonly is sandy loam, but in some places it contains thin layers of sandy clay loam. The B3 horizon is strong-brown, yellowish-brown, light yellowish-brown, or very pale brown sandy loam. Color of the C horizon is strong brown, yellowish brown, light yellowish brown, or very pale brown with pale-brown, or varying mottles.

Kenansville soils are associated with Lakeland, Kalmia, Cahaba, and Johns soils. They have Bt horizons which are lacking in Lakeland soils. They have thicker surface and subsurface layers than Kalmia, Cahaba, and Johns soils.

Kenansville sand, 0 to 4 percent slopes (KeB).—This is the only Kenansville soil mapped in the survey area. Included in mapping are a few areas of Kalmia,Cahaba, Johns, Barth, and Lakeland soils; a few areas of soils that have a yellowish-red to red subsoil; and areas where the combined thickness of the surface layer and subsoil ranges from 45 to 55 inches. Also included are a few wet areas, in depressions, 1 to 4 acres in size. These wet areas are shown on the map by wet spot symbols.

This soil is easily tilled and can be worked throughout a wide range of moisture content.

About 70 percent of the acreage is in row crops or is idle. The rest is wooded. Principal crops are corn, soybeans, tobacco, and cotton. This soil is slightly droughty. Soil blowing is a hazard on some of the larger fields. Capability unit IIs-1; woodland group 3s2.

Kershaw Series

The soils of the Kershaw series are nearly level to strongly sloping, deep, loose, excessively drained sand. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown sand about 8 inches thick. The underlying material is brownish-yellow sand to a depth of 76 inches or more.

Kershaw soils have a very low content of organic matter. Permeability is very rapid. Runoff is slow, and available water capacity is very low.

Representative profile of Kershaw sand, 0 to 15 percent slopes, in a wooded area in Sumter County, 0.4 mile south of Rosemary Fire Tower, and 30 feet west of State Highway 261:

A1—0 to 8 inches, grayish-brown (10YR 5/2) sand; single grain; loose; many fine and medium roots; strongly acid (pH 5.3); gradual, wavy boundary.

AC—8 to 22 inches, brownish-yellow (10YR 6/8) and grayish-brown (10YR 5/2) sand; single grained; loose; many fine and medium roots; strongly acid (pH 5.3); gradual, wavy boundary.

C1—22 to 51 inches, brownish-yellow (10YR 6/6) sand; single grained; loose; clean sand grains; strongly acid (pH 5.2); gradual, smooth boundary.

C2—51 to 76 inches, brownish-yellow (10YR 6/8) sand; single grained; loose; clean sand grains; very strongly acid (pH 5.0).

The texture throughout the profile is sand to coarse sand and extends to a depth of more than 80 inches. Reaction is strongly acid to very strongly acid throughout the profile. The A horizon is 4 to 8 inches thick. It is grayish brown, dark grayish brown, or very dark grayish brown in color. In places there is an AC horizon 10 to 18 inches thick. In the C horizon at a depth of 10 to 40 inches there is less than 5 percent silt plus clay. The color of the C1 horizon ranges from yellow to strong brown. The C2 horizon color ranges from reddish yellow to very pale brown.

Kershaw soils are associated with the Lakeland, Troup, Wagram, Lucy, Rutlege, and Osier soils. Kershaw soils are coarser textured throughout the profile than Lakeland, Troup, Wagram, and Lucy soils, and they are better drained than Rutlege and Osier soils.

Kershaw sand, 0 to 15 percent slopes (KhD).—This is only Kershaw soil mapped in the survey area. This soil is on crescent-shaped and parallel ridges.

Included with this soil in mapping are areas of Troup, Wagram, Lucy, and Lakeland soils, and a few areas of soils that have slopes up to 25 percent.

Most of this soil is in scrubby hardwood and a few scattered pines. Capability unit VIIs-1; woodland group 5s3.

Lakeland Series

The soils of the Lakeland series are nearly level to strongly sloping, deep, loose, and excessively drained sand. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is very dark grayish-brown sand about 7 inches thick. The underlying material is sand to a depth of more than 80 inches. The upper 35 inches of this material is yellowish brown and the lower 38 inches is brownish yellow.

Lakeland soils are low in content of organic matter. Permeability is rapid. Runoff is slow and available water capacity is low.

Representative profile of Lakeland sand, 0 to 6 percent slopes, in a cultivated field in Florence County, about one mile northwest of Coward, and 100 feet south of State Highway 488:

Ap—0 to 7 inches, very dark grayish-brown (10YR 3/2) sand; single grained; loose; many fine roots; slightly acid (pH 6.5); abrupt, smooth boundary.

C1—7 to 15 inches, yellowish-brown (10YR 5/4) sand; single grained; loose; few fine roots; most sand grains coated; few clean sand grains; medium acid (pH 6.0); gradual, wavy boundary.

C2—15 to 30 inches, yellowish-brown (10YR 5/6) sand; single grained; loose; most sand grains coated; few clean sand grains; strongly acid (pH 5.1); gradual, wavy boundary.

C3—30 to 42 inches, yellowish-brown (10YR 5/8) sand; single grained; loose; most sand grains coated; few clean sand grains; strongly acid (pH 5.4); gradual, wavy boundary.

C4—42 to 80 inches, brownish-yellow (10YR 6/6) sand; single grained; loose; common clean sand grains; strongly acid (pH 5.4)

Texture of the soil ranges from coarse sand to fine sand throughout the profile. Depth of the sand is more than 80 inches. Reaction is slightly acid to strongly acid throughout the profile. The A horizon is 4 to 8 inches thick and is very dark grayish brown, dark grayish brown, grayish brown, or brown. The upper part of the C horizon commonly is yellowish brown or strong brown, but in places it is yellow or yellowish red. The lower part is brownish yellow becoming more yellow and gray as depth increases. In the C horizon at a depth of 10 and 40 inches there is 5 to 10 percent silt plus clay.

Lakeland soils are associated with the Wagram, Lucy, Troup, Kershaw, Osier, and Rutlege soils. They are coarser textured and lack the Bt horizons that are in the Wagram, Lucy, and Troup soils. They are finer textured than Kershaw soils and are better drained than Osier and Rutlege soils.

Lakeland sand, 0 to 6 percent slopes (LaB).—This soil has the profile described as representative for the series. Included in mapping are small areas of Troup, Wagram, Lucy, Kenansville, and Kershaw soils; some areas that have a sand or loamy sand surface layer and a loamy sand subsoil; a few areas that have a subsoil with a clay accumulation; and some wet areas in slight depressions 1 to 4 acres in size. These wet areas are indicated on the map by wet spot symbols.

This soil is easily tilled. It can be worked throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

About 40 percent of this soil is in row crops or pasture. The rest is wooded. The principal crops include corn, peanuts, watermelons, soybeans, and occasionally cotton and tobacco. Pasture and hay crops are Coastal bermudagrass, bahiagrass, and sericea lespedeza. This soil is droughty and soil blowing is a hazard on some of the larger cultivated fields. Capability unit IVs-1; woodland group 4s2.

Lakeland sand, 6 to 15 percent slopes (LaD).—This sloping to strongly sloping soil is in narrow areas parallel to streams and drainageways.

Included with this soil in mapping are areas of Kershaw, Troup, Wagram, Lucy, and Sunsweet soils, and some long, narrow areas of soils along drains or small streams. A few areas where slopes are as much as 25 percent are also included.

Most of the acreage is wooded. Principal pasture and hay crops are Coastal bermudagrass, bahiagrass, and sericea lespedeza. Capability unit VIs-1; woodland group 4s2.

Leaf Series

The soils of the Leaf series are nearly level and poorly drained. They formed in stream deposits of clayey sediment.

In a representative profile the surface layer is very dark gray fine sandy loam about 5 inches thick. The next layer is about 65 inches thick. The upper 42 inches is dominantly dark-gray, very firm plastic clay; the next 12 inches is mottled gray, firm, plastic clay loam; and the lower 11 inches is mottled gray, firm, plastic clay.

Leaf soils are moderate in content of organic matter. Permeability is slow to very slow. Runoff is slow to very slow, and available water capacity is medium.

Representative profile of Leaf fine sandy loam in a wooded area in Sumter County, 2 1/4 miles west of junction of State Highway 261 and old U.S. Highway 76, 100 feet north of old Highway 76:

A1—0 to 5 inches, very dark gray (10YR 3/1) fine sandy loam; few, fine, distinct, yellowish-red and brown mottles; weak, medium, subangular blocky structure; friable; many fine and medium roots; many fine and medium pores; very strongly acid (pH 4.7); clear, smooth boundary.

B21tg—5 to 32 inches, dark-gray (10YR 4/1) clay; common, fine, distinct, strong-brown mottles; strong, medium, angular blocky structure; very firm; plastic; continuous, prominent clay films on faces of peds and in pores; many fine and medium roots; many fine and medium pores; very strongly acid (pH 4.6); gradual, smooth boundary.

B22tg—32 to 47 inches, dark-gray (10YR 4/1) clay; few, fine and medium, faint, yellowish-brown (10YR 5/8) mottles; strong, medium, angular blocky structure; very firm, plastic; continuous, prominent clay films on faces of peds and in pores; many fine and medium roots; many fine and medium pores; extremely acid (pH 4.2); clear, smooth boundary.

B31tg—47 to 59 inches, gray (10YR 5/1) clay loam; many, fine and medium, distinct, strong-brown (7.5YR 5/8) and pale-brown (10YR 6/3) mottles and few, fine, distinct, yellowish-red mottles; moderate, medium, angular blocky structure; firm, plastic; patchy clay films on faces of peds and in pores; few fine roots; common fine pores; extremely acid (pH 4.0); clear, smooth boundary.

B32tg—59 to 70 inches, mottled gray, pale-brown, strong-brown, and yellowish-red clay; moderate, medium, angular blocky structure; firm, plastic; patchy clay films on faces of peds and in pores; few fine roots; few fine pores; many fine mica flakes; extremely acid (pH 4.3); gradual, smooth boundary.

The solum ranges from 40 to more than 60 inches in thickness. Reaction is strongly acid to extremely acid throughout the profile. The A horizon commonly ranges in thickness from 4 to 12 inches. The A1 horizon is mainly dark gray, very dark gray, or grayish brown. It is 4 to 8 inches thick. In places there is an A2 horizon that is gray or light brownish-gray fine sandy loam 4 to 6 inches thick. The B1 horizon, if present, is dark-gray to grayish-brown loam or silty clay loam 3 to 7 inches thick. The B2t horizon is commonly more than 30 inches thick. Color is dark gray, gray, or light gray with few to many mottles of yellow, brown, and red. Texture is clay, silty clay, silty clay loam, and clay loam. Average clay content of the upper 20 inches of B2t horizon is 35 to 60 percent. Silt content is more than 30 percent. The B3 horizon is dark-gray, gray, or light-gray sandy clay loam, clay loam, sandy clay, or clay with few to many yellow, brown, and red mottles.

Leaf soils are associated with the Cahaba, Johns, Duplin, Wahee, and Rains soils. They are more poorly drained than Cahaba, Johns, Duplin, and Wahee soils, and they are finer textured than Rains soils.

Leaf fine sandy loam (Ls).—This is the only Leaf soil mapped in the survey area. It is in low areas adjacent to the larger streams.

Included with this soil in mapping are a few areas of Rains, Wahee, Duplin, and Johns soils. Also included are soils in long, narrow depressions where water stands most of the year. In about 35 percent of the acreage of this Leaf soil, the surface layer is silt loam, but this difference does not affect the usefulness or behavior of the soil.

The plow layer is difficult to keep in good tilth because it can be worked only within a narrow range of moisture content without clodding. Crops respond well to fertilizer and lime.

About 80 percent of the acreage is natural stands of loblolly pine and water-tolerant hardwoods and an understory of bushes and shrubs. The rest is in pasture and cultivated crops. Principal crops are corn, soybeans, small grains, and pasture grasses. Drainage is needed before this soil can be used for crops or pasture. Many areas are subject to frequent flooding. Capability unit IVw-2; woodland group 2w9.

Lenoir Series

The soils of the Lenoir series are nearly level and somewhat poorly drained. They are in low, flat areas, and they formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown loam about 7 inches thick. The next layer is about 55 inches thick. The upper 8 inches is mottled pale-brown, firm, plastic clay loam; the lower 47 inches is mottled gray, plastic clay that grades from firm to extremely firm as depth increases. The underlying material is mottled gray clay that extends to a depth of 78 inches.

Lenoir soils are moderate in organic-matter content. Permeability and runoff are slow, and available water capacity is medium.

Representative profile of Lenoir loam in a cultivated field in Sumter County, 2 1/4 miles southwest of Rembert, and 0.3 mile west of intersection of State Highways 261 and 37:

Ap—0 to 7 inches, grayish-brown (10YR 5/2) loam; weak, fine, subangular blocky structure; friable; many fine roots; strongly acid, (pH 5.4); abrupt, smooth boundary.

B1t—7 to 15 inches, pale-brown (10YR 6/3) clay loam; many, fine and medium, distinct, strong-brown (7.5YR 5/8), yellowish-brown (10YR 5/8), red (2.5YR 4/8), and gray (10YR 6/1) mottles; moderate, medium, subangular blocky structure; firm; sticky, plastic; continuous clay films on faces of peds and in pores; common fine roots; many fine and medium pores; very strongly acid (pH 4.5); clear, smooth, boundary.

B21tg—15 to 33 inches, gray (10YR 6/1) clay; many, medium, distinct, yellowish-brown (10YR 5/8) mottles and common, fine, distinct, strong-brown and red mottles; strong, medium, angular blocky structure; firm; sticky, plastic; continuous clay films on faces of peds and in pores; many fine and medium pores; very strongly acid (pH 4.8); gradual, smooth boundary.

B22tg—33 to 45 inches, gray (10YR 6/1) clay; many, medium, distinct, yellowish-brown (10YR 5/8) mottles and common, fine, distinct, strong-brown and red mottles; strong, coarse, angular blocky structure; very firm; plastic; continuous clay films on faces of peds; many fine pores; very strongly acid (pH 4.7); gradual, smooth boundary.

B3tg—45 to 62 inches, gray (10YR 6/1) clay; common, fine and medium, distinct, yellowish-brown (10YR 5/8) and red (2.5YR 4/8) mottles; massive; extremely firm; plastic; very strongly acid (pH 4.7); gradual, smooth boundary.

Cg—62 to 78 inches, gray (10YR 6/1) clay; common, fine, distinct, yellowish-brown, red, and white mottles; massive; extremely firm; very plastic; very strongly acid (pH 4.7).

The solum ranges from 50 to 80 inches in thickness. Reaction is strongly acid to very strongly acid throughout the profile. The A horizon is grayish brown, dark grayish brown, and dark gray and is 4 to 9 inches thick. The B1 horizon is 3 to 8 inches thick. It commonly is a pale-brown or grayish-brown sandy clay loam or clay loam that contains a varying degree of mottling. The B2t horizon is grayish brown or gray clay or clay loam that contains common to many yellowish-brown, strong-brown, and red mottles. The B3 horizon is sandy clay or clay. In places, lenses and pockets of sand occur in the C horizon.

Lenoir soils are associated with the Norfolk, Varina, Duplin, and Leaf soils. They are more poorly drained than Norfolk, Varina, and Duplin soils, and they are better drained than Leaf soils.

Lenoir loam (Lt).—This is the only Lenoir soil mapped in the survey area. It is in low areas.

Included with this soil in mapping are a few areas of Duplin, Leaf, and Coxville soils and a few areas of soils that have a firm sandy clay loam subsoil. Also included are about 1,000 acres of soils southwest of and adjoining the town of Pinewood in Sumter County that are similar to Lenoir soils. They have a loamy sand or sandy loam surface layer 10 to 20 inches thick, and they commonly occupy higher elevations than is normal for Lenoir soils.

Tilth is fair in most areas of this soil. Crops respond well to fertilizer and lime.

Much of the acreage is wooded. Principal crops are soybeans, truck crops, small grain, and pasture grasses. Drainage is needed for the production of crops. Capability unit IIIw-6; woodland group 2w8.

Lucy Series

The soils of the Lucy series are nearly level to sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown sand about 8 inches thick. The subsurface layer is pale-brown loamy sand about 20 inches thick. The next layer extends to a depth of about 79 inches. The upper 12 inches is yellowish-red sandy clay loam; the next 12 inches is yellowish-red sandy loam; and the lower 27 inches is red sandy clay loam.

Lucy soils are low in content of organic matter. Permeability is rapid in the surface layer and moderate in the subsoil. Runoff is slow to moderate, and available water capacity is low to medium.

Representative profile of Lucy sand, 0 to 6 percent slopes, in a cultivated field in Florence County about 7 miles northeast of Florence, 2,900 feet south of intersection of State Highway 26 and Black Swamp, one-half mile east of State Highway 26, and 150 feet southeast of field road:

Ap—0 to 8 inches, grayish-brown (10YR 5/2) sand; weak, fine, granular structure; very friable; many fine roots; medium acid (pH 6.0); abrupt, smooth boundary.

A2—8 to 28 inches, pale-brown (10YR 6/3) loamy sand; weak, fine, granular structure; very friable; common fine roots; medium acid (pH 6.0); abrupt, smooth boundary.

B21t—28 to 40 inches, yellowish-red (5YR 4/6) sandy clay loam; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid (pH 5.0); gradual, wavy boundary.

B22t—40 to 52 inches, yellowish-red (5YR 4/8) sandy loam; weak, medium, subangular blocky structure; very friable; sand grains coated and bridged with clay; strongly acid (pH 5.1); gradual, wavy boundary.

B23t—52 to 79 inches, red (2.5YR 4/6) sandy clay loam; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid (pH 4.8).

The solum is more than 60 inches thick. The A horizon ranges from medium acid to strongly acid in reaction, and from 21 to 38 inches in thickness. The Ap horizon commonly is brown to yellowish brown or grayish brown. In a few areas it is dark brown or dark grayish brown. The A2 horizon is pale-brown, brownish-yellow, yellowish-brown, or yellowish-red sand or loamy sand. The B horizon is strongly acid to very strongly acid. The Bt horizon commonly is more than 30 inches thick. It is red or yellowish red. In some areas the lower part of the horizon is strong brown or mottled pale brown to red. The texture commonly is sandy clay loam, but in some profiles it is sandy loam. In some areas there are B1 or B3 horizons of sandy loam or sandy clay loam 5 to 8 inches thick.

Lucy soils are associated with Norfolk, Orangeburg, Red Bay, Wagram, Troup, and Lakeland soils. Lucy soils have thicker surface and subsurface layers than Norfolk, Orangeburg, and Red Bay soils, and they have a redder subsoil than Wagram and Troup soils. Lucy soils have Bt horizons; Lakeland soils do not.

Lucy sand, 0 to 6 percent slopes (LuB).—This soil has the profile described as representative for the series. Included in mapping are a few areas of Wagram, Orangeburg, and Red Bay soils; a few areas of soils, 1 to 4 acres in size, that are in slight depressions. The depressions are shown on the map by wet spot symbols. Also included are a few areas of soils where the subsoil is loamy sand; a few small areas where the subsoil is sandy clay; and a few areas of dark-red soils.

The soil is easily tilled and can be worked throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

About 70 percent of the acreage is in row crops or pasture. The rest is wooded. Principal crops are cotton, tobacco, corn, soybeans, Coastal bermudagrass, bahiagrass, and sericea lespedeza. These soils are slightly droughty during periods of low rainfall. Soil blowing is a hazard on some of the larger fields. Capability unit IIs-1; woodland group 3s2.

Lucy sand, 6 to 10 percent slopes (LuC).—This soil is in narrow areas parallel to streams and drainageways. Included in mapping are a few areas of Orangeburg, Troup, and Wagram soils; some areas of soils that have slopes of 2 to 6 percent; and some that have slopes of 10 to 15 percent.

This soil is easily tilled. It can be worked throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

Most of the acreage is wooded. Principal pasture and hay crops are Coastal bermudagrass, bahiagrass, and sericea lespedeza. Erosion is a hazard if this soil is used for row crops. Capability unit IIIe-5; woodland group 3s2.

Lynchburg Series

The soils of the Lynchburg series are the most extensive in the survey area. They are nearly level, deep, and somewhat poorly drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is very dark gray sandy loam about 5 inches thick. The subsurface layer is dark grayish-brown fine sandy loam about 4 inches thick. The next layer is about 54 inches thick. The upper 6 inches is pale-brown fine sandy loam; the next 9 inches is mottled light olive-brown sandy clay loam; and the lower 39 inches is mottled gray sandy clay loam.

Lynchburg soils are moderate in organic-matter content. Permeability is moderate. Runoff is slow, and internal drainage is medium. Available water capacity is medium.

Representative profile of Lynchburg sandy loam in a wooded area in Sumter County, 15 miles east of Sumter, 0.8 mile north of State Highway 53, and 50 feet east of County Road 61:

A1—0 to 5 inches, very dark gray (10YR 3/1) sandy loam; weak, medium, granular structure; very friable; many fine and medium roots; few fine pores; extremely acid (pH 4.4); clear, smooth boundary.

A2—5 to 9 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many fine and medium roots; few fine pores; very strongly acid (pH 4.8); clear, smooth boundary.

B1—9 to 15 inches, pale-brown (10YR 6/3) fine sandy loam; few, fine, distinct, yellowish-brown mottles; weak, fine, subangular blocky structure; friable; many fine roots; many fine pores; very strongly acid (pH 5.0); clear, wavy boundary.

B21t—15 to 24 inches, light olive-brown (2.5Y 5/4) sandy clay loam; few, fine, distinct, reddish-yellow and light-gray mottles; weak, fine, subangular blocky structure; friable; common fine roots; many fine pores; sand grains coated and bridged with clay; very strongly acid (pH 4.7); gradual, wavy boundary.

B22tg—24 to 52 inches, gray (10YR 6/1) sandy clay loam; many, coarse, distinct, yellowish-brown (10YR 5/8) mottles with strong brown (7.5YR 5/8) centers; weak, medium, subangular blocky structure; friable; few fine roots; few fine pores; sand grains coated and bridged with clay; very strongly acid (pH 4.8); gradual, smooth boundary.

B3tg—52 to 63 inches, mottled gray (10YR 5/1), yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/8), and red (2.5YR 4/6) sandy clay loam containing pockets of sandy loam and clay; weak, coarse, subangular blocky structure; friable; some zones of clean, light-gray sand grains, but most sand grains bridged and coated; very strongly acid (pH 4.8); clear, smooth boundary.

Cg—63 to 72 inches, mottled gray (10YR 6/1), yellowish-brown (10YR 5/6), red (2.5YR 5/8), and strong-brown (7.5YR 5/8) clay loam; massive; firm; very strongly acid (pH 4.5).

The solum is more than 60 inches thick. Reaction ranges from strongly acid to extremely acid throughout the profile. The A horizon commonly ranges from 8 to 12 inches in thickness. The A1 horizon is very dark gray, dark gray, dark grayish brown, or very dark grayish brown. The A2 horizon, if present, is dark grayish brown, grayish brown, light brownish gray, or very pale brown loamy sand, sandy loam, or fine sandy loam 2 to 6 inches thick. The B1 horizon is lacking in many profiles. If present, it ranges in thickness from 6 to 11 inches. The color is pale yellow or pale brown with mottling of yellowish brown and gray. The texture of the B2t horizon commonly is sandy clay loam, but it also includes sandy loam and clay loam. Thickness is 30 to 60 inches. The upper part of the B2t horizon is light olive brown or yellowish brown containing a few to many mottles of gray, red, yellow, and brown. Mottles with chroma of 2 or less occur in the upper 10 inches of the B2t horizon. At a depth of about 20 to 25 inches, the Bt horizon has dominant colors with chroma of 2 or less and common to many mottles of higher chroma. The B3 horizon has dominant colors with chroma of 2 or less and common to many mottles of higher chroma. The B3 horizon is sandy loam or sandy clay loam coarsely mottled with gray, yellow, brown, and red. It commonly is 10 to 25 inches thick. The C horizon ranges in texture from sand to clay. It is gray to coarsely mottled.

The Lynchburg soils are associated with the Norfolk, Goldsboro, Duplin, Rains, and Coxville soils. They are more poorly drained than Norfolk, Goldsboro, and Duplin soils and are better drained than Rains and Coxville soils.

Lynchburg sandy loam (Ly).—This is the only Lynchburg soil mapped in the survey area. It is in broad areas.

Included with this soil in mapping are small areas of Goldsboro and Duplin soils that occur at slightly higher elevations, and wet areas of Coxville, Rains, and Pantego soils 1 to 4 acres in size. These small wet areas are shown on the map by wet spot symbols. Also included are areas of soils that have a combined surface layer and subsoil 40 to 60 inches thick; a few areas of soils that have a subsoil with a clay content of 10 to 18 percent; and a few areas of soils that have a surface layer of loamy sand and loamy fine sand. About 30 percent of this soil has a surface layer of fine sandy loam which does not alter its usefulness and behavior.

Tilth generally is good on this Lynchburg soil. Drainage is required for the production of crops. Crops respond well to fertilizer and lime.

About 65 percent of the acreage is wooded. The rest is in row crops and pasture. Principal crops are tobacco, corn, soybeans, and small grain. Capability unit IIw-2; woodland group 2w8.

Lynn Haven Series

The soils of the Lynn Haven series are nearly level and poorly drained. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is black sand about 8 inches thick. The subsurface layer is gray sand about 4 inches thick. The next layer is dark reddish-brown, firm, weakly cemented loamy sand about 17 inches thick. The underlying material is dark-brown sand to a depth of about 55 inches. Below this layer is very dark gray sandy loam.

Lynn Haven soils are moderate in content of organic matter. Permeability is moderate due to the hardpan. Runoff is slow. The water table is at or near the surface for long periods of the year. This impedes infiltration and permeability during wet periods. Available water capacity is low.

Representative profile of Lynn Haven sand in a cleared area in Florence County, about 4 miles east of Timmonsville, 1 1/2 miles south of junction of State Highways 106 and 107, and 250 feet southwest of Timmonsville Fire Tower:

A1—0 to 8 inches, black (10YR 2/1) sand; weak, fine, granular structure; very friable; many fine roots; common clean sand grains; extremely acid (pH 4.4); abrupt, smooth boundary.

A2—8 to 12 inches, gray (10YR 6/1) sand; single grained; loose; common fine roots; strongly acid (pH 5.3); abrupt, wavy boundary.

B2h—12 to 29 inches, dark reddish-brown (5YR 2/2) loamy sand with streaks of black (5YR 2/1); weak, medium, subangular blocky structure; firm; weakly cemented; friable when crushed; uppermost inch of horizon very firm; few fine and medium roots; few pores and old root channels; extremely acid (pH 4.0); clear, wavy boundary.

C—29 to 55 inches, dark-brown (10YR 4/3 and 7.5YR 3/2) sand; single grained; loose; few old decaying roots; strongly acid (pH 5.2); gradual, wavy boundary.

IIAb—55 to 72 inches, very dark gray (10YR 3/1) sandy loam; common, medium, distinct, gray (10YR 5/1) mottles; massive; friable, very strongly acid (pH 4.9).

The solum ranges from 28 to 50 inches in thickness. Reaction is strongly acid to extremely acid throughout the profile. The A1 horizon commonly is about 7 to 8 inches thick. Few to many white or gray sand grains occur in this horizon and give it a salt and pepper appearance. The A2 horizon commonly is 2 to 5 inches thick but ranges to 16 inches. It is gray or light-gray sand. The Bh horizon commonly is within the depth of 2 feet. It is dark-reddish brown, dark-brown, or black loamy sand or sand about 8 to 20 inches thick. Sand grains are well coated with organic matter. Cementation is weak to moderate. In places, there is a B3 horizon of brown, dark grayish-brown, or very dark grayish brown loose sand. The C horizon is dark brown, grayish brown, or gray. Mottles with higher chroma occur occasionally in this horizon. Some areas have a structureless layer of finer material beneath the sand at a depth of 55 to 70 inches. The texture in many areas is sand to a depth of more than 72 inches.

Lynn Haven soils are associated with Lakeland, Chipley, Barth, Pantego, Rutlege, and Osier soils. They are more poorly drained than Lakeland, Chipley, and Barth soils and they have a hardpan subsoil that is lacking in Pantego, Osier, and Rutlege soils.

Lynn Haven sand (Lz).—This is the only Lynn Haven soil mapped in the survey area. It is in shallow depressions or bays, on upland flats, and in areas bordering small streams and drainageways.

Included with this soil in mapping are a few areas of Rutlege, Osier, and Pantego soils. In 30 to 40 percent of the acreage of this soil, the black surface layer is less than 7 inches thick. In other respects, however, the soil is like Lynn Haven sand. Also included with this soil is a small area of soils that have a well-developed fragipan in the sandy underlying material beneath a thick hardpan subsoil.

Most of the acreage is wooded. A few drained areas are in pasture or hay. Capability unit Vw-3; woodland group 4w3.

Made Land

Made land (Ma) consists of areas where the soil material has been so mixed by excavation, filling, or other disturbances that the original soil horizons have been destroyed. Most of these areas are in a gravel mining area and around towns where areas have been filled for construction purposes.

Because soil characteristics are extremely variable and behavior is difficult to predict, investigations are needed at individual sites for determining uses. Conditions to be considered in managing this land are low available water capacity, low fertility, and erosion. Capability unit not classified; woodland group not classified.

McColl Series

The soils of the McColl series are nearly level and poorly drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is black fine sandy loam about 5 inches thick. The next layer is about 45 inches thick. The upper 4 inches is grayish-brown, friable sandy clay loam, and the next 8 inches is light brownish-gray, firm sandy clay. Below is 33 inches of mottled strong-brown, firm, hard, brittle sandy clay loam. The underlying material is mottled sandy loam and sandy clay loam.

McColl soils are moderate in content of organic matter. Permeability is slow. Runoff is ponded, and available water capacity is medium to low.

Representative profile of McColl fine sandy loam in Sumter County, 2 miles west of intersection of State Highways 120 and 33, and 100 feet north of State Highway 33:

Ap—0 to 5 inches, black (10YR 2/1) fine sandy loam; weak, fine, granular and subangular blocky structure; very friable; many roots and partly decayed organic matter; neutral (pH 6.8); clear, smooth boundary.

B1—5 to 9 inches, grayish-brown (10YR 5/2) sandy clay loam; weak, fine, subangular blocky structure; friable; many fine roots; strong-brown root stains along old channels; very strongly acid (pH 4.8); clear, smooth boundary.

B2tg—9 to 17 inches, light brownish-gray (2.5Y 6/2) sandy clay; many, coarse, distinct, strong-brown (7.5YR 5/6) mottles; weak, fine, subangular blocky structure; firm; many fine roots; many fine pores; contains pockets of strong-brown peds that are coated with gray; patchy clay films on faces of peds; very strongly acid (pH 4.8); clear, irregular boundary.

Bx1—17 to 22 inches, strong-brown (7.5YR 5/6) sandy clay loam; many, coarse, distinct, light-gray (10YR 7/1) and pale-brown (10YR 6/3) tongues or vertical streaks; brown part breaks to moderate, medium and coarse, angular and subangular blocky structure; firm; hard; compact and brittle; thin patchy clay films on faces of brown peds; many large voids inside peds; many fine and medium pores; common fine roots; few plinthite nodules; very strongly acid (pH 5.0); clear, irregular boundary.

Bx2—22 to 50 inches, coarsely mottled strong-brown (7.5YR 5/6) sandy clay loam and light-gray (10YR 7/1) clay loam; moderate, medium, prismatic which breaks to angular and subangular blocky structure; strong-brown clay loam is hard, brittle, compact; gray clay loam is in vertical streaks and fine polygons; thin patchy clay films on faces of brown peds; common coatings and pockets of black iron-manganese material; few plinthite nodules; many pores; very strongly acid (pH 5.0); gradual, wavy boundary.

C1—50 to 72 inches, reddish-yellow (7.5YR 6/8) sandy loam; common, medium, distinct mottles of light-gray (10YR 7/1) clay loam; massive; firm in place; friable when dug out; very strongly acid (pH 5.0); gradual, wavy boundary.

C2—72 to 84 inches, mottled light-gray (10YR 7/1) sandy clay loam and yellow (10YR 7/6) sandy loam; massive; friable; common, black manganese coatings; very strongly acid (pH 4.5).

The solum ranges from 35 to 60 inches in thickness. Depth to the fragipan is 12 to 30 inches. A few to common (less than 5 percent) plinthite nodules are throughout some profiles, and few to common iron concretions are in others. The A horizon is neutral to strongly acid. The Ap or A1 horizon is 4 to 8 inches thick. Color commonly is dark gray, very dark gray, or black, but in a few places it is dark grayish brown. In a few places there is an A2 horizon, 3 to 5 inches thick, of very pale brown or light-gray fine sandy loam or sandy loam. The B horizon is strongly acid to very strongly acid. The B1 horizon is gray, grayish brown, or light brownish gray. It is 3 to 6 inches thick. The B1 horizon is lacking in places. The B2t horizon is gray, grayish-brown, or light brownish-gray clay loam or sandy clay with a clay content of 35 to 50 percent. In places it has few to many mottles of pale brown to strong brown. The Bx horizon is about 25 to 50 inches thick. It has dominant colors of strong brown with grays in vertical streaks, and many mottles of brownish yellow, yellowish brown, and yellowish red, and a few of red and olive brown. The texture of the brown part is sandy clay loam, and the gray is sandy clay loam, sandy clay, or clay loam. The C horizon is mottled gray, yellow, brown, and red loamy sand, sandy loam, sandy clay loam, or sandy clay.

McColl soils are associated with Wagram, Norfolk, Orangeburg, Varina, and Goldsboro soils. They have a fragipan which is lacking in Wagram, Norfolk, Orangeburg, Varina, and Goldsboro soils.

McColl fine sandy loam (Mc).—This is the only McColl soil mapped in the survey area. It is in concave, oval-shaped depressions that have no natural outlets.

Included with this soil in mapping are a few small areas of Coxville and Rembert soils; a few areas of soils that have a

subsoil containing less than 35 percent clay; and some areas of soils that have a loam surface layer.

Tilth is fair to somewhat poor on this McColl soil. Crops respond well to fertilizer and lime.

About 75 percent of the acreage is wooded. The rest is in crops and pasture. Drainage is required for the production of crops, and some areas lack drainage outlets. Principal crops are corn, soybeans, oats, pasture grasses, and hay crops. Capability unit IIIw-2; woodland group 2w9.

Mine Pits and Dumps

Mine pits and dumps (Mp) consists of open pits from which gravel, sand, and other soil material has been removed. It also includes areas where the soil material removed in mining operations has been dumped. A few areas of this land type have been reclaimed by spreading the spoil and planting pine trees, or in some places Coastal bermudagrass is planted to be used for pasture or hay. Borrow pits from which soil, generally sand, has been removed are 2 to 10 feet deep and 2 to 30 acres in size. Areas smaller than 2 acres are shown on the soil map by a special symbol. Borrow pits deeper than 4 feet generally contain water. Shallow pits contain water during rainy periods.

This land needs extensive smoothing and reshaping before any forestry, grazing, or farming operations can begin. In some places water-bearing strata have been penetrated, and ponds for fish or for irrigation may be developed. Capability unit VIIs-2; woodland group not classified.

Norfolk Series

The soils of the Norfolk series are nearly level to gently sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown loamy sand about 8 inches thick. The subsurface layer is pale-brown loamy sand about 5 inches thick. The next layer is sandy clay loam about 55 inches thick. It is yellowish brown in the upper 33 inches and brownish yellow with gray mottles in the lower 22 inches. The underlying material is mottled gray sandy clay.

Norfolk soils are low in content of organic matter. Permeability is moderate. Available water capacity is medium.

Representative profile of Norfolk loamy sand, 0 to 2 percent slopes, in a cultivated field in Florence County, about 4 miles south of Florence, 1,600 feet west of intersection of U.S. Highway 301 and State Highway 107, and 275 feet north of the State Highway:

Ap—0 to 8 inches, grayish-brown (10YR 5/2) loamy sand; weak, fine, granular structure; very friable; common fine roots; medium acid (pH 5.7); abrupt, smooth boundary.

A2—8 to 13 inches, pale-brown (10YR 6/3) loamy sand; weak, fine, granular structure; very friable; few fine roots; slight amount of Ap horizon material around root channels; medium acid (pH 5.6); clear, smooth boundary.

B21t—13 to 36 inches, yellowish-brown (10YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; common fine and medium pores; strongly acid (pH 5.4); gradual, wavy boundary.

B22t—36 to 46 inches, yellowish-brown (10YR 5/6) sandy clay loam; few, medium, distinct, yellowish-red (5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; common fine pores; very strongly acid (pH 4.9); gradual, wavy boundary.

B23t—46 to 68 inches, brownish-yellow (10YR 6/8) sandy clay loam; common, coarse, distinct, gray (10YR 6/1) mottles; mottles increase in number and size as depth increases; weak, medium, subangular blocky structure; friable; very strongly acid (pH 5.0); gradual, wavy boundary.

C—68 to 80 inches, gray (10YR 6/1) sandy clay; many, medium, prominent, yellowish-brown (10YR 5/6) and red (2.5YR 4/6) mottles; massive; firm; strongly acid (pH 5.1).

The solum ranges in thickness from 60 to more than 72 inches. Reaction in the A horizon is medium acid to strongly acid. The A horizon is 7 to 20 inches thick. The Ap horizon is dark grayish brown, grayish brown, or dark gray. The A2 horizon commonly ranges from 3 to 12 inches in thickness and is pale-brown, brown, very pale brown, or light yellowish-brown loamy sand or loamy fine sand. The B horizon is strongly acid to very strongly acid. The B1 horizon, if present, is 2 to 4 inches thick. The B2t horizon is sandy loam or sandy clay loam 40 to more than 50 inches thick. It is yellowish, brown, brownish yellow, or strong brown. The lower part of the B2t horizon commonly is mottled strong brown, yellowish red, pale brown, and occasionally, red and gray. Varying amounts of plinthite occur in places at depths of more than 60 inches. The B3 horizon, if present, is sandy loam or sandy clay loam; it ranges in thickness from 8 to 30 inches and commonly is mottled with brownish yellow, strong brown, yellowish red, and gray. The C horizon is loamy sand, sandy loam, sandy clay loam, or sandy clay.

Norfolk soils are associated with Orangeburg, Lucy, Lynchburg, Wagram, Varina, and Goldsboro soils. They have a yellower subsoil than Orangeburg and Lucy soils and a thinner surface layer and subsurface layer than Wagram and Lucy soils. Norfolk soils have a coarser textured subsoil than Varina soils and are better drained than Lynchburg and Goldsboro soils.

Norfolk loamy sand, 0 to 2 percent slopes (NoA).—This soil is on broad uplands. It has the profile described as representative for the series.

Included with this soil in mapping are small areas of Orangeburg, Wagram, Brogdon, and Goldsboro soils that are at the same elevation or slightly lower; a few small areas of soils that contain 5 to 15 percent plinthite at depths of 40 to 60 inches; long, narrow areas of Norfolk loamy sand, 2 to 6 percent slopes; small, low areas,1 to 4 acres in size, of Duplin and Lynchburg soils; and wet areas of Rains, Coxville, and Pantego soils of less than 4 acres in size. These wet areas are shown on the map by wet spot symbols. Also included are a few hundred acres of this soil in which the lower part of the subsoil is clay loam or sandy clay that is firm to very firm. These areas are mainly in the western part of Sumter County within 5 miles of the Wateree River. About 30 percent of the acreage of this Norfolk soil has a loamy fine sand surface layer, but this difference does not affect management.

This Norfolk soil is easily tilled. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. Principal crops are tobacco, cotton, corn, and soybeans. Soil blowing is a hazard on some large fields. Capability unit I-1; woodland group 2o1.

Norfolk loamy sand, 2 to 6 percent slopes (NoB).—This soil is on broad ridgetops and in narrow areas parallel to streams and drainageways.

Included with this soil in mapping are small areas where erosion has exposed the subsoil; a few small areas of soils that have slopes less than 2 percent; small areas that have slopes of 6 to 8 percent; and small areas of Wagram, Brogdon, and Varina soils. Also included are some low wet areas, less than 4 acres in size, of Rains, Coxville, and Pantego soils. These wet areas are shown on the map by wet spot symbols. In about 30 percent of the acreage, this Norfolk soil has a loamy fine sand surface layer.

Crops respond well to fertilizer and lime.

Most of the acreage is cultivated. Principal crops are cotton, corn, tobacco, soybeans, and small grain. Erosion is a hazard on this soil. Capability unit IIe-1; woodland group 2o1.

Norfolk Series, Moderately Deep Variant

The soils of the Norfolk series, moderately deep variant, are nearly level, and well drained. They formed in loamy Coastal Plain sediment. These soils are similar to the more extensive Norfolk soils, but are outside the series range, principally because of their moderate depth.

In a representative profile the surface layer is dark grayish-brown loamy sand about 6 inches thick. The subsurface layer is very pale brown loamy sand about 12 inches thick. The next layer is 26 inches thick. The upper 22 inches is yellowish-brown sandy clay loam, and the lower 4 inches is mottled sandy loam. Below a depth of about 44 inches is broken, strongly cemented ironstone that has pockets of soil material between fragments.

Norfolk soils, moderately deep variant, are low in content of organic matter. Permeability is moderate. Available water capacity is medium.

Representative profile of Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes, in a wooded area in Sumter County about 5 1/2 miles north of Sumter, and three-fourths mile south of State Highway 15:

A1—0 to 6 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; many fine and medium roots; few fine and medium fragments of ironstone; very strongly acid (pH 4.7); clear, smooth boundary.

A2—6 to 18 inches, very pale brown (10YR 7/4) loamy sand; weak, medium, granular structure; very friable; common fine and medium roots; few fine and medium pores; few fine and medium fragments of ironstone; strongly acid (pH 5.3); clear, wavy boundary.

B2t—18 to 40 inches, yellowish-brown (10YR 5/8) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy, faint, clay films on faces of peds and in pores; few fine roots; common fine and medium pores; common, fine, medium and large fragments of ironstone; the number and size of fragments increases as depth increases; strongly acid (pH 5.2); clear, irregular boundary.

B3t—40 to 44 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/8); red (2.5YR 4/8), and gray (10YR 6/1) sandy loam; weak, medium, subangular blocky structure; friable; many small, medium, and large fragments of ironstone; strongly acid (pH 5.1); abrupt, irregular boundary.

R—44 to 50 inches, mostly strongly cemented ironstone containing pockets of soil material between fragments.

The solum commonly ranges from 40 to 60 inches in thickness. Reaction is strongly acid to very strongly acid throughout the profile. Total thickness of the A horizon ranges from 10 to 20 inches. The plow layer commonly is grayish brown, dark grayish brown, or dark gray. The A2 horizon ranges from 4 to 12 inches in thickness, and from pale brown, very pale brown, light yellowish brown, or brownish yellow in color. The B1 horizon, if present, is 2 to 4 inches thick. The Bt horizon is 25 to 50 inches thick. It is yellowish-brown or strong-brown sandy loam or sandy clay loam. In places the part of this horizon below a depth of 40 inches is mottled with yellowish red, red, and gray, and in places a few plinthite nodules occur in the lower half of the horizon. A few fragments of ironstone commonly occur on the surface and throughout the profile. In the lower part of the Bt horizon, the number generally is greater. The Bt horizon is underlain by a broken or discontinuous layer of strongly cemented ironstone that has pockets of soil material between fragments. This layer commonly is at a depth of 40 to 60 inches.

Norfolk soils, moderately deep variant, is associated with Orangeburg; Wagram; Goldsboro; Lynchburg; Coxville; Goldsboro, moderately deep variant; Rains, moderately deep variant; and normal Norfolk soils. Norfolk soils, moderately deep variant, have a yellower subsoil than Orangeburg soils. They have a thinner surface layer and subsurface layer than Wagram soils and are better drained than Goldsboro; Lynchburg; Coxville; Goldsboro, moderately deep variant; and Rains, moderately deep variant, soils. Norfolk soils, moderately deep variant, have a thinner solum than Orangeburg, Wagram, Goldsboro, Lynchburg, Coxville, and Norfolk soils, all of which lack the cemented ironstone layers.

Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes (NrA).—This soil is on smooth, broad upland areas.

Included with this soil in mapping are areas of Norfolk soils in which the combined surface layer and subsoil is more than 60 inches thick. Also included are a few areas of Wagram soils; a few areas where the surface layer is loamy fine sand; a few small areas that have a sandy clay subsoil; a few areas of soils that have a red subsoil; and a few wet areas, in slight depressions 1 to 4 acres in size. These wet areas are shown on the map by wet spot symbols.

This soil has good tilth and can be worked throughout a wide range of moisture content.

Most of the acreage is cultivated. Principal crops are cotton, tobacco, corn, and soybeans. The shallow depth of bedrock is a hazard for many engineering practices. Capability unit I-1; woodland group 2o1.

Olanta Series

The soils of the Olanta series are nearly level, moderately deep and deep loamy sand and sand. They are moderately well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is very dark grayish-brown loamy sand about 7 inches thick. The subsurface layer is light yellowish-brown loamy sand about 4 inches thick. The next layer is about 31 inches thick. The upper 23 inches is yellowish-brown sandy loam, and the lower 8 inches is mottled yellowish-brown loamy sand. The underlying material is mottled sand that becomes dominantly light gray at depths below 65 inches.

Olanta soils are moderate in organic-matter content. Permeability is moderate. Runoff is slow, and available water capacity is medium.

Representative profile of Olanta loamy sand in a cultivated field in Florence County, 1 3/4 miles northeast of Lake City, 0.9 mile east of intersection of U.S. Highway 378 and State Highway 85, and 0.4 mile north of State Highway 85:

Ap—0 to 7 inches, very dark grayish-brown (10YR 3/2) loamy sand; weak, fine, granular structure; very friable; common fine roots; slightly acid (pH 6.3); abrupt, smooth boundary.

A2—7 to 11 inches, light yellowish-brown (10YR 6/4) loamy sand; weak, fine, granular structure; very friable; few fine roots; many fine pores; medium acid (pH 5.8); clear, smooth boundary.

B2t—11 to 25 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged; many fine and medium pores; very strongly acid (pH 4.8); gradual, wavy boundary.

B31t—25 to 34 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; sand grains coated and bridged; many fine and medium pores; few medium and coarse, red, soft plinthite nodules; strongly acid (pH 5.2); gradual, wavy boundary.

B32—34 to 42 inches, yellowish-brown (10YR 5/4) loamy sand; few, medium, faint, pale-brown (10YR 6/3) mottles and few, medium, distinct, strong-brown (7.5YR 5/6) mottles; weak, coarse, subangular blocky structure; very friable; few clean sand grains; strongly acid (pH 5.2); gradual, wavy boundary.

C1—42 to 65 inches, mottled yellow (10YR 7/6), light-gray (10YR 7/2), and white (10YR 8/1) sand; few, fine, distinct, strong-brown mottles; single grained; loose; strongly acid (pH 5.3); gradual, wavy boundary.

C2—65 to 75 inches, light-gray (10YR 7/1) sand; common, medium, faint, pale-brown (10YR 6/3) mottles; single grained; loose; medium acid (pH 5.7).

The solum is about 30 to 45 inches thick. Reaction in the A horizon is slightly acid to strongly acid. Depth to water table ranges from 30 to 40 inches most of the year. The A horizon commonly is 10 to 14 inches thick but ranges from 8 to 20 inches. The Ap horizon is very dark grayish brown or very dark gray. The A2 horizon ranges from 3 to 13 inches

in thickness. It is brown, pale brown, or light yellowish brown. Below the A horizon, reaction is medium acid to very strongly acid to depths of 60 inches. The B2t horizon is 10 to 15 inches thick. In places it has a few mottles of pale brown, strong brown, or yellowish red. Clay content of the upper 20 inches of the B2t horizon averages 10 to 18 percent; silt content is less than 20 percent. The B3 horizon is 10 to 17 inches thick. It is yellowish brown to brownish yellow containing few to common mottles of pale brown, strong brown, yellowish red, and light brownish gray. Mottles with a chroma of 2 or less are at a depth of more than 24 inches below the top of the Bt horizon. The C horizon is mottled gray, yellow, brown, white, and red sand or loamy sand.

Olanta soils are associated with Kalmia, Goldsboro, Lynchburg, Rains, Chipley, and Barth soils. Olanta soils have a coarser textured subsoil than Kalmia and Goldsboro soils. They are better drained than Lynchburg and Rains soils and have a finer textured subsoil than Chipley and Barth soils.

Olanta loamy sand (On).—This is the only Olanta soil mapped in the survey area. This soil is in broad areas on divides between drainageways.

Included with this soil in mapping are areas of Goldsboro, Johns, Barth, Chipley, and Lynchburg soils. Also included are areas of Rains and Pantego soils, 1 to 4 acres in size. These are shown on the map by wet spot symbols. A few included areas of soils have gray mottles within a depth of 24 inches of the top of the subsoil.

Good tilth is easily maintained on this Olanta soil. The water table is within a depth of 3 feet a large part of the year. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. Principal crops are tobacco, corn, cotton, soybeans, truck crops, and small grain. Drainage is needed for the production of crops. Capability unit IIw-2; woodland group 2w2.

Orangeburg Series

The soils of the Orangeburg series are nearly level to strongly sloping, deep, friable, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown loamy sand about 10 inches thick. The subsurface layer is pale-brown loamy fine sand about 6 inches thick. The next layer is about 64 inches thick. The upper 44 inches is friable sandy clay loam that is yellowish red in the upper part and red in the lower part; the lower 20 inches is mottled, red sandy clay.

Orangeburg soils are low in content of organic matter. Permeability is moderate. Available water capacity is medium.

Representative profile of Orangeburg loamy sand, 0 to 2 percent slopes, in a cultivated field in Florence County, about 4 miles northeast of Florence, 150 feet east of State Highway 925, and 0.8 mile south of State Highway 24:

Ap—0 to 10 inches, grayish-brown (10YR 5/2) loamy sand; weak, fine granular structure; very friable; few fine roots; strongly acid (pH 5.4); abrupt, smooth boundary.

A2—10 to 16 inches, pale-brown (10YR 6/3) loamy fine sand; common, medium, faint, light yellowish-brown (10YR 6/4) mottles; weak, medium, granular structure; very friable; few fine roots and pores; strongly acid (pH 5.5); abrupt, wavy boundary.

B21t—16 to 33 inches, yellowish-red (5YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy faint clay films on faces of peds; few fine roots; many fine pores; few, medium to large, soft-red to dark-red, brittle nodules; few, small and medium, hard, dark-red iron concretions; strongly acid (pH 5.2); gradual, wavy boundary.

B22t—33 to 60 inches, red (2.5YR 4/8) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy clay films on faces of peds; few fine roots; common fine pores; few, small, hard concretions with yellowish-brown coatings and dark-red centers; strongly acid (pH 5.2); gradual, wavy boundary.

B3t—60 to 80 inches, red (2.5YR 4/8) sandy clay; few, medium, distinct, brownish-yellow (10YR 6/6) mottles and common, medium, faint, red (10YR 4/8) mottles; weak, medium, subangular blocky structure; firm; strongly acid (pH 5.1).

The solum ranges from 60 to more than 72 inches in thickness. Reaction is medium acid to strongly acid in the A horizon and strongly acid below. The A horizon ranges from 6 to 20 inches in thickness. The Ap horizon to a depth of 5 to 10 inches is dark grayish brown, dark brown, or reddish brown. The A2 horizon commonly ranges from 3 to 11 inches in thickness, and the color is pale brown, yellowish brown, strong brown, or yellowish red. Texture of the A2 horizon is loamy sand or loamy fine sand. In places there is a B1 horizon that is strong-brown to yellowish-red sandy loam or sandy clay loam. The B2t horizon is more than 40 inches thick. It is yellowish-red or red sandy loam or sandy clay loam. In places the lower Bt horizon is sandy clay or clay loam mottled with yellow, brown, and red. The B3 horizon has a texture of sandy loam or sandy clay.

Orangeburg soils are associated with Norfolk, Faceville, Red Bay, Lucy, Wagram, Troup, and Lakeland soils. They have a redder subsoil than Norfolk, Wagram, and Troup soils. They have a coarser textured subsoil than Faceville soils and a subsoil that is not as dark red as that of the Red Bay soils. They have thinner surface and subsurface layers than Lucy soils. Orangeburg soils have a Bt horizon that is lacking in Lakeland soils.

Orangeburg loamy sand, 0 to 2 percent slopes (OrA).—This soil is on broad upland areas. It has the profile described as representative for the series.

Included with this soil in mapping are a few areas of Faceville, Norfolk, Lucy, and Red Bay soils; a few areas of soils where slopes are 2 to 6 percent; and a few small areas of wet soils, in slight depressions 1 to 4 acres in size. These wet areas are designated on the map by wet spot symbols. In Florence County the surface layer is fine sand in about 25 percent of the acreage of this Orangeburg soil, but this difference does not affect management.

This Orangeburg soil is easily tilled and can be worked throughout a wide range of moisture content.

Most of the acreage is in row crops. Principal crops are cotton, tobacco, corn, and soybeans. Soil blowing is a hazard on some large fields. Capability unit I-1; woodland group 2o1.

Orangeburg loamy sand, 2 to 6 percent slopes (OrB).—This soil is on broad ridgetops and in narrow areas where slopes are parallel to streams and drainageways.

Included with this soil in mapping are small areas of Faceville, Norfolk, Red Bay, and Lucy soils, and a few eroded areas where the surface soil is sandy loam to a depth of 4 to 6 inches. Also included are a few areas of soils where slopes are 0 to 2 percent and some where slopes are 6 to 10 percent.

Good tilth is easily maintained in most areas of this Orangeburg soil. In a few eroded areas, however, the subsoil has been mixed with the thin surface layer through plowing, and in these areas good tilth is more difficult to maintain.

Most of the acreage is cultivated. Principal crops are cotton, corn, soybeans, small grain, and peaches. Erosion is the chief management concern. Capability unit IIe-1; woodland group 2o1.

Orangeburg loamy sand, 6 to 10 percent slopes (OrC).—This soil slopes irregularly in narrow areas on the breaks along drains and small streams.

Included with this soil in mapping are small areas of Faceville, Norfolk, and Sunsweet soils, and a few eroded areas where the surface layer to a depth of 4 to 6 inches is sandy loam. Also included are a few areas of soils that have 2 to 6 percent slopes and some that have 10 to 15 percent slopes.

Good tilth on this Orangeburg soil is easily maintained, except in eroded areas where the surface layer is thin. Crops respond well to fertilizer and lime.

About 90 percent of the acreage is wooded. Principal crops are corn, soybeans, small grain, peaches, bermuda-

grass, and bahiagrass. Erosion is the chief management concern. Capability unit IIIe-1; woodland group 2o1.

Orangeburg loamy sand, 10 to 15 percent slopes (OrD).—This soil slopes irregularly in narrow areas along small drains and on the breaks from the uplands to the flood plains of some of the larger streams.

Included with this soil in mapping are small areas of Faceville, Norfolk, Lucy, and Sunsweet soils, and a few eroded areas where the surface layer to a depth of 4 to 6 inches is sandy loam. Also included are a few shallow gullies and some small areas of soils where slopes are more than 15 percent or less than 10 percent.

Good tilth in the plow layer is fairly easy to maintain on this Orangeburg soil except on eroded areas where the surface layer is thin. Crops on this soil respond well to fertilizer and lime.

Most of the acreage is wooded. Some areas that once were cultivated have been reforested. It is not practical to cultivate this soil because of the narrow, irregular slopes and the severe erosion hazard. The hazard of erosion is the chief management concern. Capability unit IVe-1; woodland group 2o1.

Osier Series

The soils of the Osier series are nearly level and poorly drained to very poorly drained. They formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is black loamy sand about 4 inches thick. The underlying material is sand. The upper 9 inches of this sand is light brownish gray, the next 18 inches is gray, and below a depth of about 31 inches, it is white.

Osier soils are low in content of organic matter. Permeability is very rapid but is impeded by a high water table. Runoff is very slow, and these soils are ponded much of the time. Available water capacity is low.

Representative profile of Osier loamy sand in a wooded area in Sumter County, 4 1/3 miles northwest of junction of State Highway 120 and State Highway 261, and 200 feet east of State Highway 261:

A1—0 to 4 inches, black (10YR 2/1) loamy sand; weak, medium, granular structure; loose; many fine and medium roots; common gray sand grains; surface has a salt and pepper appearance; strongly acid (pH 5.3); clear, smooth boundary.

ACg—4 to 8 inches, mixed light brownish-gray (10YR 6/2) and dark grayish-brown (10YR 4/2) sand; weak, fine, granular structure; loose; many fine and medium roots; strongly acid (pH 5.4); clear, smooth boundary.

C1g—8 to 13 inches, light brownish-gray (10YR 6/2) sand; weak, medium, granular structure; loose; many fine and medium roots; strongly acid (pH 5.1); clear, smooth boundary.

C2g—13 to 31 inches, gray (10YR 6/1) sand; few, fine, distinct, yellowish-brown stains in old root channels; single grained; loose; many fine roots; very strongly acid (pH 5.0); clear, smooth boundary.

C3g—31 to 72 inches, white (10YR 8/1) sand; single grained; loose; strongly acid (pH 5.5).

Reaction is strongly acid to very strongly acid throughout the profile. The A1 horizon is 2 to 6 inches thick and is very dark gray or black. The C horizon is dark gray, light brownish gray, light gray, or white. In places there are a few pale-brown to yellowish-brown mottles. The C horizon dominantly is sand or fine sand but in places is loamy fine sand.

Osier soils are associated with Kershaw, Lakeland, Troup, Barth, Chipley, Lynchburg, Rains, and Rutlege soils. They are more poorly drained than Kershaw, Lakeland, Troup, Barth, Chipley, and Lynchburg soils, and are coarser textured than Rains soils. Osier soils lack the thick, black or very dark gray surface layer of Rutlege soils.

Osier loamy sand (Os).—This is the only Osier soil mapped in the survey area. This soil is in oval-shaped depressions and in low, wet areas adjacent to small streams.

Included with this soil in mapping are areas of Rutlege, Pantego, Rains, and Chipley soils; small areas of soils of mixed materials; and a few areas where the surface layer is sand or loamy fine sand. Also included are a few areas where a sandy loam or sandy clay loam horizon 6 to 15 inches thick occurs at depths between 40 and 60 inches.

This Osier soil has a high water table, and ponding occurs much of the year.

Most of the acreage is wooded; a few areas are in pasture. Capability unit Vw-2; woodland group 3w3.

Pantego Series

The soils of the Pantego series are nearly level and very poorly drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is black loam about 10 inches thick. The next layer is friable sandy clay loam that extends to a depth of about 60 inches. The upper 4 inches of this layer is very dark gray; the next 6 inches is light brownish gray; the next 22 inches is mottled light gray; and the lower 18 inches is mottled gray.

Pantego soils are high in organic-matter content. Permeability is moderate, runoff is very slow or the soils are ponded, and available water capacity is medium.

Representative profile of Pantego loam in a wooded area in Sumter County, a half mile east of U.S. Highway 15, on the south side of Frontage Road, and south of U.S. Highway 76 bypass:

A1—0 to 10 inches, black (N 2/0) loam; weak, fine, granular structure; very friable; many fine pores; extremely acid (pH 4.4); abrupt, smooth boundary.

B21tg—10 to 14 inches, very dark gray (10YR 3/1) sandy clay loam; weak, medium, subangular blocky structure; friable; slightly sticky; patchy clay films on faces of ped; many fine roots; many fine and medium pores; very strongly acid (pH 4.5); clear, smooth boundary.

B22tg—14 to 20 inches, light brownish-gray (2.5Y 6/2) sandy clay loam; moderate, medium, subangular blocky structure; friable; slightly sticky; patchy clay films on faces of peds and in pores; many fine roots; many fine and medium pores; very strongly acid (pH 4.5); gradual, smooth boundary.

B23tg—20 to 26 inches light-gray (10YR 7/1) sandy clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; slightly sticky; continuous clay films on faces of peds and in pores; many fine roots; many fine and medium pores; very strongly acid (pH 4.5); clear, smooth boundary.

B24tg—26 to 42 inches, light-gray (10YR 7/1) sandy clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles, and few, medium, distinct, strong-brown (7.5YR 5/8) and red (2.5YR 5/8) mottles; weak, medium, subangular blocky structure; friable; slightly sticky; patchy clay films on faces of peds; few fine roots; many fine pores; very strongly acid (pH 4.5); gradual, wavy boundary.

B25tg—42 to 60 inches, gray (10YR 6/1) sandy clay loam; common, medium, distinct, strong-brown (7.5YR 5/8) mottles; weak, medium, subangular blocky structure; friable; sticky; patchy clay films; few fine pores; very strongly acid (pH 4.6).

The solum is more than 60 inches thick. Reaction is medium acid to extremely acid in the A horizon and strongly acid to very strongly acid below. The A horizon is 10 to 20 inches thick and is black or very dark gray. In places there is a B1g horizon that is 4 to 10 inches of black to dark-gray sandy loam or sandy clay loam. The B2tg horizon ranges from 30 to more than 50 inches in thickness. It is very dark gray, dark gray, gray, or light gray. It commonly becomes lighter in color as depth increases. In places there are few to common yellow, brown, and red mottles. The B2tg horizon is sandy clay loam, sandy loam, or clay loam. The B3g horizon, if present, is dark-gray, gray, or light-gray

sandy loam or sandy clay loam. Few to common mottles of higher chroma generally are present.

Pantego soils are associated with Norfolk, Goldsboro, Duplin, Lynchburg, Coxville, Rains, and Rutlege soils. Pantego soils have a thicker black surface layer and are more poorly drained than Norfolk, Goldsboro, Duplin, Lynchburg, Coxville, and Rains soils. They are finer textured throughout than Rutlege soils.

Pantego loam (Pa).—This is the only Pantego soil mapped in the survey area. It is in slight depressions along drainageways, in oval-shaped bays, and at the head of draws.

Included with this soil in mapping are small areas of Rains, Coxville, and Rutlege soils; small areas of soils that are more than 35 percent clay in the subsoil; areas of soils that have a sandy loam subsoil; and some areas where the surface layer is sandy loam or fine sandy loam. Also included are areas of soils that have a combined surface layer and subsoil 40 to 60 inches thick.

Tilth is fair on this soil. Crops respond well to fertilizer and lime.

About 80 percent of the soil is wooded, and about 20 percent is drained and is cultivated or in pasture. Principal crops are corn, soybeans, oats, and pasture grasses. Drainage is required for the production of crops. Capability unit IIIw-4; woodland group 1w9.

Pocalla Series

The soils of the Pocalla series are nearly level to gently sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown sand about 7 inches thick. The subsurface layer is light yellowish-brown sand about 20 inches thick. The next layer is strong-brown sandy loam about 14 inches thick. Below this layer is yellow loamy sand about 21 inches thick. The next layer, which extends to a depth of 75 inches, is mottled, yellowish-brown sandy clay loam.

Pocalla soils are low in content of organic matter. Permeability is moderate to moderately rapid. Runoff is slow, and available water capacity is low to medium.

Representative profile of Pocalla sand, 0 to 4 percent slopes, in city of Sumter, 200 feet east of junction of Laurel and Lafayette Streets, and 50 feet south of Laurel Street:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) sand; weak, medium, granular structure; loose; many small roots; medium acid (pH 5.8); abrupt, smooth boundary.

A2—7 to 27 inches, light yellowish-brown (10YR 6/4) sand; weak, medium, granular structure; loose; many small roots; medium acid (pH 5.6); clear, smooth boundary.

B2t—27 to 41 inches, strong-brown (7.5YR 5/8) sandy loam; weak, medium, subangular blocky structure; very friable; many small roots; sand grains bridged with clay; strongly acid (pH 5.2); gradual, wavy boundary.

A'2—41 to 62 inches, yellow (10YR 7/6) loamy sand; single grained; loose; many streaks and pockets of clean light-gray (10YR 7/1) sand grains; strongly acid (pH 5.4); clear, wavy boundary.

B't—62 to 75 inches, yellowish-brown (10YR 5/8) sandy clay loam; few, fine and medium, distinct, strong-brown (7.5YR 5/8), yellowish-red (5YR 4/8), and red (2.5Y 4/8) mottles; weak, medium, subangular blocky structure; friable; very strongly acid (pH 4.9).

The solum is more than 70 inches thick.

The A horizon ranges from 21 to 36 inches in thickness. Reaction is medium acid to strongly acid. The Ap or A1 horizon commonly is dark grayish brown or grayish brown. The A2 horizon is pale-brown, light yellowish-brown or very pale brown sand or loamy sand 13 to 29 inches thick. Reaction in the B horizon is strongly acid to very strongly acid. The B2t horizon is yellowish-brown or strong-brown sandy loam or sandy clay loam 8 to 15 inches thick. In places there is a B3 horizon that is commonly yellowish-brown or strong-brown sandy loam or loamy sand 6 to 12 inches thick. The A'2 horizon is at a depth of 35 to 50 inches. This horizon commonly is 13 to 24 inches thick but ranges from 8 to 30 inches. It is very pale brown, pale-brown, brownish-yellow, or reddish-yellow sand or loamy sand. The B't horizon is sandy clay loam or sandy loam that commonly has mottles of brown, yellow, red, and gray, but in places it is dominantly yellowish brown. This horizon extends to a depth of more than 72 inches. A few plinthite nodules are in this horizon in places, but they make up less than 5 percent of any subhorizon less than 60 inches from the surface.

Pocalla soils are associated with Norfolk, Brogdon, Wagram, Troup, Lakeland, and Goldsboro soils. They have thicker surface and subsurface layers than Norfolk, Brogdon, and Goldsboro soils, and they have A'2 horizons that are lacking in Wagram and Troup soils. Pocalla soils have Bt horizons; Lakeland soils do not.

Pocalla sand, 0 to 4 percent slopes (PlB).—This is the only Pocalla soil mapped in the survey area. Included in mapping are small areas of Brogdon, Wagram, and Troup soils; a few small areas of moderately well drained soils that are bisequel; and a few areas, less than 4 acres in size, of poorly drained soils, which are shown on the map by wet spot symbols. Also included are a few small areas of soils that are 5 to 15 percent plinthite at depths between 50 and 60 inches.

This soil is easy to till soon after rainfall. Crops respond well to fertilizer and limes.

About 70 percent of the acreage is in row crops or pasture. The rest is wooded. Principal crops are watermelons, sweet potatoes, Coastal bermudagrass, bahiagrass, and sericea lespedeza. Soil blowing is a hazard on some of the larger fields. Capability unit IIs-1; woodland group 3s2.

Ponzer Series

The soils of the Ponzer series are organic, and they are nearly level and very poorly drained. They formed in fresh water in woody material.

In a representative profile the surface layer is very dark brown organic material about 22 inches thick. The underlying material, to a depth of 72 inches, consists of layers of loamy sand or clay loam and alternating layers of sand.

Ponzer soils are very high in content of organic matter. Permeability is slow; it is restricted by a high water table. Runoff is very slow, and ponding occurs throughout the year. Available water capacity is medium.

Representative profile of Ponzer soils in Sumter County, about 2 miles northeast of Turbeville, 1 1/2 miles northwest of the southern lip in about the center of Dial Bay:

Oa1—0 to 22 inches, very dark brown (10YR 2/2) sapric material; less than 5 percent fiber; massive; friable; many fine and medium roots and pores; very strongly acid (pH 4.5); clear, wavy boundary.

IIC1—22 to 29 inches, pale-brown (10YR 6/3) loamy sand; weak, fine, subangular blocky structure; friable; common fine roots and pores; very strongly acid (pH 4.8); clear, smooth boundary.

IIC2—29 to 35 inches, very pale brown (10YR 7/3) sand that has pockets of clean white sand; single grained; loose; few fine roots; strongly acid (pH 5.1); abrupt, wavy boundary.

IIIC3—35 to 43 inches, black (10YR 2/1) clay loam; massive; firm; many fine and medium partly decomposed roots; few fine pores; very strongly acid (pH 4.6); abrupt, wavy boundary.

IVC4—43 to 49 inches, grayish-brown (10YR 5/2) sand; single grained; loose; few partly decomposed roots; very strongly acid (pH 4.9); abrupt, wavy boundary.

VC5—49 to 53 inches, black (10YR 2/1) clay loam; massive; firm; many fine and medium partly decomposed roots; very strongly acid (pH 4.6); abrupt, wavy boundary.

VIC6—53 to 63 inches, light-gray (10YR 7/2) sand; single grained; loose; very strongly acid (pH 4.9); abrupt, wavy boundary.

VIIC7—63 to 72 inches, black (10YR 2/1) clay loam; massive; firm; many fine and medium partly decomposed roots; strongly acid (pH 5.1).

Reaction is strongly acid to extremely acid throughout the profile. The organic layer is 16 to about 30 inches thick. Fiber content is less

than 5 percent, and color is very dark brown or black. Below the organic layer are alternating layers, 4 to 15 inches thick, of sand, loamy sand, sandy loam, sandy clay loam, sandy clay, or clay loam. The sandy layers are pale brown, very pale brown, or white; the finer textured layers are brown, dark gray, or black.

Ponzer soils are associated with Pantego, Rutlege, Osier, Lakeland, Rimini, and Barth soils. They contain more organic material throughout the profile than Pantego, Rutlege, Osier, Lakeland, Rimini, and Barth soils.

Ponzer soils (Po).—This undifferentiated group of very poorly drained soils is the only mapping unit of the Ponzer series in the survey area. Areas are oval shaped and are in depressions. The major soil material is Ponzer muck. Ponzer soils were mapped at a lower intensity than most other mapping units in this survey.

Included with these soils in mapping are soils that have an organic surface layer less than 16 inches thick. Also included are areas of Pantego and Rutlege soils. Most of the inclusions are in a strip one-fourth to one-half mile wide on the outer edges of the bays.

This soil is used for trees and as habitat for wildlife. If management includes intensive drainage and reclamation, it can be used for improved pasture, corn, soybeans, and oats. Capability unit VIIw-1; woodland group 4w3.

Rains Series

The soils of the Rains series are nearly level and poorly drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is very dark gray sandy loam about 7 inches thick. The subsurface layer is light brownish-gray sandy loam about 5 inches thick. The next layer is dominantly gray and is about 67 inches thick. The upper 8 inches is sandy loam; the next 20 inches is friable sandy clay loam; the next 12 inches is firm sandy clay loam; and the lower 27 inches is friable sandy clay loam. The underlying material is light-gray sand.

Rains soils are moderate in content of organic matter. Permeability is moderate. Runoff is slow, and available water capacity is medium.

Representative profile of Rains sandy loam in a wooded area in Florence County, 2 miles southeast of Timmonsville, about 1.1 miles south of intersection of State Highway 45 and U.S. Highway 76, and 150 feet west of State Highway 45:

A1—0 to 7 inches, very dark gray (10YR 3/1) sandy loam; weak, fine, granular structure; very friable; many fine and medium roots; extremely acid (pH 4.4); clear, smooth boundary.

A2—7 to 12 inches, light brownish-gray (10YR 6/2) sandy loam; weak, fine, granular structure; very friable; common fine and few medium roots; common fine pores; few tongues of A1 horizon in upper part; very strongly acid (pH 4.7); clear, wavy boundary.

B1g—12 to 20 inches, gray (10YR 6/1) sandy loam; few, medium, distinct, yellowish-brown (10YR 5/6) mottles in lower half; weak, coarse, subangular blocky structure; friable; thin patchy clay films on faces of peds; few fine and medium roots; common fine pores; very strongly acid (pH 4.8); gradual, wavy boundary.

B21tg—20 to 40 inches, gray (10YR 6/1) sandy clay loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles, and few, fine, prominent, red mottles; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; few fine and medium roots; common fine pores; few small pockets of gray sandy loam; very strongly acid (pH 4.8); gradual, wavy boundary.

B22tg—40 to 52 inches, gray (10YR 6/1) sandy clay loam; few, fine and medium, prominent, red, (2.5YR 4/6) and yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; firm; thin patchy clay films on faces of peds; few fine pores; very strongly acid (pH 4.6); gradual, wavy boundary.

B23tg—52 to 62 inches, gray (10YR 6/1) sandy clay loam; few, medium, distinct, brownish-yellow (10YR 6/6) mottles; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; very strongly acid (pH 4.6); gradual, wavy boundary.

B3g—62 to 79 inches, gray (10YR 6/1) sandy clay loam; few fine, distinct, brownish-yellow mottles; weak, coarse, subangular blocky structure; friable; very strongly acid (pH 4.6); gradual, wavy boundary.

IICg—79 to 85 inches, light-gray (10YR 7/1) sand; single grained; loose; very strongly acid (pH 4.9).

The solum commonly is more than 60 inches thick. Reaction is strongly acid to extremely acid throughout the profile. The A horizon is 6 to 16 inches thick. The surface layer is 4 to 9 inches thick and is dark gray, gray, or black in color. The A2 horizon is light brownish-gray, grayish-brown, or dark-gray fine sandy loam, sandy loam, or loamy sand 4 to 8 inches thick. In places it is missing from the profile. The B1g horizon is gray or grayish-brown sandy loam or sandy clay loam that has a few mottles of yellowish brown. In places this horizon is lacking. The B2tg horizon is sandy loam or sandy clay loam and commonly is 30 to 42 inches thick. It has few to many mottles of brownish yellow, yellowish brown, strong brown, yellowish red, and red. The B3g horizon is sandy loam to sandy clay loam. It ranges in thickness from 3 to 20 inches, and it has mottles of brownish yellow, yellowish brown, strong brown, yellowish red, and red. The C horizon is gray to light-gray sand to clay loam.

Rains soils are associated with Norfolk, Goldsboro, Johns, Lynchburg, Wahee, Coxville, and Pantego soils. They are more poorly drained than Norfolk, Goldsboro, Johns, Lynchburg, and Wahee soils. Rains soils have a coarser textured subsoil than Coxville soils, and they are better drained than Pantego soils.

Rains sandy loam (Ra).—This poorly drained soil is along drainageways, in oval-shaped depressions, and on broad, irregularly shaped level areas.

Included with this soil in mapping are small areas of Coxville, Pantego, Lynchburg, Osier, Rutlege, Leaf, Wahee, and Johns soils; a few areas of soils that have a combined surface layer and subsoil 30 to 60 inches thick; and a few areas of soils that are more than 20 percent silt. In about 25 percent of the acreage, the surface layer is fine sandy loam, and in about 10 percent, it is loamy sand.

About 75 percent of this soil is wooded. The rest is used for crops or pasture. The principal crops are corn, soybeans, small grain, and pasture grasses. Capability unit IIIw-4; woodland group 2w3.

Rains Series, Moderately Deep Variant

The soils of the Rains series, moderately deep variant, are nearly level and poorly drained. They formed in loamy Coastal Plain sediment. These soils are similar to normal Rains soils in many respects but are outside the series range, principally because of their moderate depth.

In a representative profile the surface layer is very dark gray sandy loam about 7 inches thick. The next layer is about 29 inches thick. The upper 7 inches is light-gray sandy loam; the next 16 inches is mottled, gray sandy clay loam; and the lower 6 inches is light-gray sandy loam. Below a depth of about 36 inches is broken, strongly cemented ironstone that has pockets of soil material between fragments.

Rains soils, moderately deep variant, are moderate in content of organic matter. Permeability is moderate. Available water capacity is medium.

Representative profile of Rains sandy loam, moderately deep variant, in an idle field in Sumter County, about 6 miles north of Sumter, about one-half mile south of the junction of U.S. Highway 15 and State Highway 105, and 550 feet east of U.S. Highway 15:

Ap—0 to 7 inches, very dark gray (10YR 3/1) sandy loam; weak, medium, granular structure; very friable; many fine and medium roots; very strongly acid (pH 4.8); clear, smooth boundary.

B1tg—7 to 14 inches, light-gray (10YR 7/2) sandy loam; common, medium, distinct, yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/6) mottles, and few, fine, distinct, yellowish-red mottles; weak, medium, subangular blocky structure; friable; many fine roots; many fine pores; very strongly acid (pH 4.6); clear, smooth boundary.

B21tg—14 to 24 inches, gray (10YR 6/1) sandy clay loam; common, coarse, distinct, yellowish-brown (10YR 5/8) mottles, and few, fine and medium, distinct, pale-brown (10YR 6/3), strong-brown (7.5YR 5/6), and yellowish-red (5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; patchy, faint, clay films on faces of peds and pores; common fine roots; many fine and medium pores; very strongly acid (pH 4.6); clear, smooth boundary.

B22tg—24 to 30 inches, mottled gray (10YR 6/1), yellowish-brown (10YR 5/8), and strong-brown (7.5YR 5/6) sandy clay loam that has few, fine, distinct, yellowish-red mottles; weak, medium, subangular blocky structure; friable; patchy, faint clay films on faces of peds and in pores; few fine roots; many fine and medium pores; very strongly acid (pH 4.7); clear, smooth boundary.

B3g—30 to 36 inches, light-gray (10YR 7/1) sandy loam that has common, fine, distinct, yellowish-brown and strong-brown mottles; weak, medium, subangular blocky structure; friable; few fine roots; many (25 to 30 percent) fine, medium, and large fragments of ironstone; strongly acid (pH 5.2); abrupt, irregular boundary.

R—36 to 45 inches, mostly strongly cemented ironstone that has pockets of soil material between fragments.

The solum ranges from 30 to 60 inches in thickness. Reaction is strongly acid to very strongly acid throughout the profile. The A horizon is 6 to 16 inches thick. The Ap horizon is dark gray or very dark gray. The A2 horizon, if present, is 3 to 8 inches of fine sandy loam, sandy loam, or loamy sand, and color is grayish brown, light grayish brown, or light gray. The B1tg horizon is 4 to 8 inches thick. It is gray or light gray and has few to common mottles of pale brown, yellowish brown, strong brown, or yellowish red. The B2tg horizon is gray or light-gray sandy loam or sandy clay loam. It commonly is 15 to 30 inches thick. This horizon has few to common pale-brown, yellowish-brown, strong-brown, or yellowish-red mottles. The B3g horizon ranges in thickness from 4 to 10 inches. It commonly is gray or light gray. Mottles are pale brown to yellowish red. In places a few fragments of ironstone occur on the surface and throughout the profile. They generally increase in number in the lower part of the B horizon. The B horizon is underlain by a broken or discontinuous layer of strongly cemented ironstone that has pockets of soil material between fragments.

Rains soils, moderately deep variant, is associated with Norfolk soils, Norfolk soils, moderately deep variant, Goldsboro soils, Goldsboro soils, moderately deep variant, and Lynchburg soils. Rains soils, moderately deep variant, are more poorly drained than any of these soils, and they have a thinner solum than Norfolk, Goldsboro, and Lynchburg soils, all of which lack the cemented ironstone layers.

Rains sandy loam, moderately deep variant (Rd).—This soil is in slightly depressed areas. Included in mapping are areas of Rains and Lynchburg soils that have a combined surface layer and subsoil more than 60 inches thick. Also included are a few areas of Goldsboro loamy sand, moderately deep variant; some areas of soils that have a fine sandy loam or loamy sand surface layer; a few areas of soils that have a sandy clay subsoil; and a few that have a sandy loam to loamy sand subsoil.

About 75 percent of the acreage is wooded. The rest is in crops or is pasture. The principal crops are soybeans, oats, and pasture grasses. Drainage ditches are difficult to dig because of the underlying rock. Capability unit IIIw-4; woodland group 2w3.

Red Bay Series

The soils of the Red Bay series are nearly level to gently sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is dark reddish-brown sandy loam about 7 inches thick. The subsurface layer is dark reddish-brown sandy loam about 6 inches thick. The next layer is sandy loam and extends to a depth of 72 inches. The upper 42 inches of this layer is dark red, and the lower 17 inches is red.

Red Bay soils are low in content of organic matter. Permeability is moderate. Available water capacity is medium.

Representative profile of Red Bay sandy loam, 0 to 2 percent slopes, in a cultivated field that adjoins property of the South Carolina Commission of Forestry in Sumter County, 1 1/4 miles east of Wedgefield, 3/8 mile south of intersection of State Highway 763 and a dirt road, and 30 feet west of the dirt road:

Ap—0 to 7 inches, dark reddish-brown (5YR 3/3) sandy loam; weak, medium, granular structure; friable; many small roots; strongly acid (pH 5.1); clear, smooth boundary.

A2—7 to 13 inches, dark reddish-brown (2.5YR 3/4) sandy loam; weak, medium, granular structure; friable; common small roots; many clear quartz grains and a few that are dark colored; very strongly acid (pH 4.9); gradual, smooth boundary.

B21t—13 to 55 inches, dark-red (10R 3/6) sandy loam; weak, medium, granular structure; friable; slightly sticky; sand grains coated and bridged; few small roots; many clear quartz grains and a few that are dark colored; strongly acid (pH 5.4); gradual, smooth boundary.

B22t—55 to 72 inches, red (10R 4/6) sandy loam; weak, medium, granular structure; friable; sand grains coated and bridged; few small roots; slightly sticky; very strongly acid (pH 4.7).

The solum commonly is more than 72 inches thick. Reaction is strongly acid to very strongly acid throughout the profile. The A horizon ranges in thickness from 7 to 15 inches. The plow layer commonly is dark brown or dark reddish brown. The A2 horizon commonly is 3 to 8 inches thick and is dark red or dark reddish brown. In places the A2 horizon is absent. The Bt horizon is sandy loam or sandy clay loam.

The Red Bay soils are associated with the Greenville, Orangeburg, Lucy, and Lakeland soils. The subsoil in Red Bay soils is coarser textured than that in Greenville soils and is darker red than that in Orangeburg soils. Red Bay soils have thinner surface and subsurface layers than Lucy soils and they have Bt horizons that are lacking in Lakeland soils.

Red Bay sandy loam, 0 to 2 percent slopes (ReA).—This nearly level soil is on broad upland areas. It has the profile described as representative for the series.

Included with this soil in mapping are small areas of Lucy, Orangeburg, Greenville, and Lakeland soils and a few small areas of soils that have a loamy sand subsoil. Also included are areas of soils in slight depressions. These are 1 to 4 acres in size and are shown on the map by wet spot symbols.

This soil is easily tilled throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. Principal crops are cotton, tobacco, corn, and soybeans. Capability unit I-1; woodland group 2o1.

Red Bay sandy loam, 2 to 6 percent slopes (ReB).—This soil occurs on broad ridges. Included in mapping are a few small areas of Lucy, Orangeburg, Greenville, and Lakeland soils; a few small areas of soils that have slopes of less than 2 percent; and some soils that have slopes of 6 to 8 percent. Also included are areas in slight depressions, 1 to 4 acres in size, that are shown on the map by wet spot symbols.

Most of this soil is cultivated. Principal crops are cotton, corn, soybeans, and small grain. Erosion is the chief management concern. Capability unit IIe-1; woodland group 2o1.

Rembert Series

The soils of the Rembert series are nearly level, moderately deep, and poorly drained. They formed in clayey and sandy Coastal Plain sediment.

In a representative profile the surface layer is black loam about 4 inches thick. The subsurface layer is very dark brown sandy clay loam about 3 inches thick. The next layer is 28 inches thick. The upper 4 inches of this layer is dark-gray sandy clay loam; the next 7 inches is gray, firm clay; the next 9 inches is mottled, gray, firm sandy clay; and the lower 8 inches is mottled, gray, friable sandy clay loam. The underlying material is mottled, gray sandy clay loam to a depth of 72 inches.

Rembert soils are moderate in content of organic matter. Permeability is slow. Runoff is slow. Runoff from surrounding areas floods these soils in many places unless outlet ditches are dug. Available water capacity is medium.

Representative profile of Rembert loam in a wooded area in Sumter County, about 7 miles southwest of Sumter, about one-half mile northwest of intersection of State Highways 120 and 40, and 50 feet north of a dirt road in a "Carolina Bay:"

O1—2 inches to 0, partly decomposed pine needles.

A1—0 to 4 inches, black (5YR 2/1) loam; weak, fine, granular and weak, coarse, subangular blocky structure; friable; many fine and medium roots; few fine pores; extremely acid (pH 4.3); clear, smooth boundary.

A3—4 to 7 inches, very dark brown (10YR 2/2) sandy clay loam; weak, fine, granular and weak, coarse, subangular blocky structure; friable; many fine and medium roots; few fine pores; very strongly acid (pH 4.5); clear, wavy boundary.

B1g—7 to 11 inches, dark-gray (10YR 4/1) sandy clay loam; weak, medium, subangular blocky structure; firm, slightly sticky and plastic; common fine roots and few medium roots; many small pores; very strongly acid (pH 4.5); clear, wavy boundary.

B2tg—11 to 18 inches, gray (10YR 6/1) clay; moderate, medium, subangular blocky structure; firm; sticky and plastic; thin patchy clay films on faces of peds; few fine roots; few medium pores; very strongly acid (pH 4.6); clear, wavy boundary.

B31tg—18 to 27 inches, gray (10YR 6/1) sandy clay; common, coarse, distinct, yellowish-brown (10YR 5/8) mottles; moderate, medium, subangular blocky structure; firm; sticky and plastic; thin patchy clay films on faces of peds; few small roots; many small pores; old root channels stained with yellowish-red (5YR 4/6) material; yellowish-brown mottles are oriented in vertical columns that are interspaced in the gray matrix; strongly acid (pH 5.1); clear, wavy boundary.

B32g—27 to 35 inches, gray (10YR 6/1) sandy clay loam; common, coarse, distinct, yellowish-brown (10YR 5/8) mottles, and few, fine, prominent, red mottles; weak, medium, subangular blocky structure; friable; few small roots; many small pores; yellowish-brown mottles are loamy sand containing a few coarse quartz grains; mottling is oriented in vertical columns that are interspersed in the gray matrix; very strongly acid (pH 4.8); gradual, wavy boundary.

C1g—35 to 48 inches, gray (10YR 6/1) sandy clay loam; many, medium, distinct, brownish-yellow (10YR 6/8) mottles, and many, medium, prominent, red (2.5YR 4/8) mottles; massive; friable; few coarse quartz grains; very strongly acid (pH 4.7); clear, smooth boundary.

C2g—48 to 72 inches, gray (10YR 6/1) sandy clay loam; many, medium, distinct, brownish-yellow (10YR 6/8) and strong-brown (7.5YR 5/6) mottles; massive; friable; common coarse quartz grains; very strongly acid (pH 4.7).

The solum is 25 to 60 inches in thickness. Reaction is strongly acid to extremely acid throughout the profile. The A1 or Ap horizon is 4 to 8 inches thick and commonly is black or very dark gray. The A horizon often is directly over the B2t horizon. In places the B1 horizon is 3 to 5 inches thick. The B2t horizon is sandy clay, clay loam, or clay 6 to 35 inches thick. In places it has few to many mottles of yellowish brown to red. The B3 horizon is gray or light gray sandy loam, sandy clay loam, sandy clay, or clay loam that has few to many yellowish-brown to red mottles. The C horizon is dominantly gray or white sand, loamy sand, sandy loam, or sandy clay loam that has few to many mottles of yellow, brown, or red.

Rembert soils are associated with Faceville, Norfolk, Orangeburg, Varina, Wagram, Duplin, and Lynchburg soils. Rembert soils are more poorly drained and have thinner sola than any of these soils, and they have more clay in the B2t horizons than Norfolk, Orangeburg, Wagram, and Lynchburg soils.

Rembert loam (Rm).—This is the only Rembert soil mapped in the survey area. It is in oval-shaped depressions known locally as Carolina Bays.

Included with this soil in mapping are a few areas of Coxville, McColl, and Rains soils and a few areas of soils that have a surface layer of sandy loam, fine sandy loam, or clay loam.

Tilth of this soil is fair to poor, but it can be improved by drainage. Crops respond well to fertilizer and lime.

About 70 percent of this soil is wooded. The rest is in crops, is pasture, or is idle. Principal crops are corn, soybeans, hay, and pasture grasses. Capability unit IIIw-2; woodland group 2w9.

Rimini Series

In the Rimini series are nearly level to gently sloping, deep, excessively drained sandy soils that contain a hardpan horizon in which sand grains are coated by organic matter. These soils formed in sandy Coastal Plain sediment.

In a representative profile the surface layer is dark-gray sand about 4 inches thick. The subsurface layer is white sand about 54 inches thick. The next layer is dark reddish-brown and black, slightly brittle sand that is weakly cemented with organic matter. It is about 12 inches thick. The underlying material is sand. The upper 10 inches of this material is dark brown and contains many black, slightly brittle lumps. At a depth below about 80 inches the sand is gray.

Rimini soils are very low in content of organic matter. Permeability is very rapid to the hardpan horizon where it becomes moderate. Runoff is slow, and available water capacity is very low.

Representative profile of Rimini sand in Sumter County, about 10 miles south of Wedgefield on State Highway 261, 1.5 miles east on a sand road in Manchester State Forest, and then 500 feet south of road:

A1—0 to 4 inches, dark-gray (10YR 4/1) sand containing many clean white sand grains that give the material a salt and pepper appearance (surface mostly white); single grained; loose; many fine roots; very strongly acid (pH 4.8); gradual, wavy boundary.

A21—4 to 21 inches, white (5Y 8/1) sand; single grained; loose; clean sand grains; many fine roots; strongly acid (pH 5.2); clear, smooth boundary.

A22—21 to 58 inches, white (N 8/0) sand; single grained; loose; clean sand grains; few fine roots; strongly acid (pH 5.2); abrupt, smooth boundary.

B21h—58 to 60 inches, black (5YR 2/1) sand; common, medium, faint, dark reddish-brown (5YR 3/2) mottles; weak, medium, subangular blocky structure; friable; slightly brittle and cemented; sand grains mostly well coated with organic matter; clean sand grains in places in dark reddish-brown part; very strongly acid (pH 4.5); clear, wavy boundary.

B22h—60 to 70 inches, dark reddish-brown (5YR 3/2) sand; many, coarse, faint, black (5YR 2/1) and dark reddish-brown (5YR 2/2) mottles; single grained; loose; slightly firm and brittle in black bodies; sand grains well coated with organic matter; very strongly acid (pH 4.5); gradual, wavy boundary.

C1&B3h—70 to 80 inches, dark-brown (7.5YR 4/2) sand; many, coarse, distinct, black (5YR 2/1) bodies; single grained; loose; mostly clean sand grains in brown part; black lumps well coated with organic matter; black lumps are slightly brittle and cemented; very strongly acid (pH 4.6); gradual, wavy boundary.

C2—80 to 88 inches, gray (10YR 5/1) sand; common, coarse, distinct, black (10YR 2/1) lumps stained with organic matter; single grained; loose; strongly acid (pH 5.2).

Reaction is strongly acid to extremely acid throughout the profile. Soil material above the continuous hardpan horizon that is cemented with organic matter is 30 to 70 inches thick. The A1 horizon is 3 to 7 inches thick. It is a mixture of white sand grains and black organic material. The A2 horizon is white or light-gray, clean, uncoated sand

or fine sand 25 to 65 inches thick. In many places thin continuous layers or bodies of Bh material are in this horizon. The B2h horizon commonly is sand or fine sand 10 to 24 inches thick. Colors are reddish brown, dark reddish brown, or dark brown. This horizon is brittle and slightly cemented in at least the upper inch, and it has brittle and slightly cemented lumps throughout. In places C1 and Bh horizons are 6 to 12 inches thick. The C2 horizon is gray to pale brown.

Rimini soils are associated with Kershaw, Lakeland, Rutlege, and Pantego soils. Rimini soils have a hardpan that is cemented with organic matter, but such a hardpan is lacking in the associated soils.

Rimini sand (Rs).—This is the only Rimini soil mapped in the survey area. It occurs on rims around "Carolina Bays" and along the Lynches River.

Included with this soil in mapping are some small areas of Kershaw and Lakeland soils; a few areas of soils that have organic-stained horizons below a depth of 70 inches; and a few areas of soils that have hardpan horizons cemented with organic matter at depths of less than 30 inches. Also included are a few areas of soils that do not have continuous hardpan horizons.

All of this soil is wooded. Native vegetation is blackjack oak, turkey oak, and a few longleaf pines. Slash pine and longleaf pine have been planted in a few small areas. Capability unit VIs-1; woodland group 5s3.

Rutlege Series

The soils of the Rutlege series are nearly level, very poorly drained, and sandy.

In a representative profile the surface layer is black loamy sand about 12 inches thick. Beneath the surface layer is mottled dark grayish-brown loamy sand about 8 inches thick. The underlying material is sand to a depth of 72 inches. The upper 24 inches of this is light gray; the next 6 inches is grayish brown; and the lower 22 inches is light gray.

Rutlege soils are high in content of organic matter. Permeability is rapid but is impeded by a high water table most of the time. Runoff is very slow and ponding is frequent. Available water capacity is low.

Intensive drainage is needed for pasture grasses and hay crops.

Representative profile of Rutlege loamy sand in a wooded area in Florence County, about 7 miles west of Johnsonville, 0.3 mile south of junction of secondary State Highways 58 and 49, and one-half mile west of State Highway 49:

A1—0 to 12 inches, black (10YR 2/1) loamy sand, common white sand grains; weak, medium, granular structure; very friable; many fine and medium roots; very strongly acid (pH 4.6); clear, smooth boundary.

ACg—12 to 20 inches, dark grayish-brown (10YR 4/2) loamy sand; common, coarse, faint, very dark grayish-brown (10YR 3/2) mottles and common, medium, distinct, light-gray (10YR 7/1) mottles; single grained; loose; common fine and medium roots; very strongly acid (pH 4.8); gradual, wavy boundary.

C1g—20 to 44 inches, light-gray (10YR 7/1) sand; single grained; loose; few medium roots; very strongly acid (pH 4.6); clear, wavy boundary.

C2g—44 to 50 inches, grayish-brown (10YR 5/2) sand; single grained; loose; very strongly acid (pH 4.5); clear, wavy boundary.

C3g—50 to 72 inches, light-gray (10YR 7/2) sand; few, medium, distinct, grayish-brown (10YR 5/2) mottles, and few, fine, faint, pale-brown mottles; single grained; loose; extremely acid (pH 4.4).

Reaction is strongly acid to extremely acid throughout the profile. The A1 horizon is 10 to 20 inches thick. It is high in organic matter and is black or very dark gray. The C horizon is very dark gray, dark-gray, gray, dark grayish-brown, grayish-brown, or light brownish-gray sand or loamy sand. Few to common mottles of yellowish brown are in this horizon in places. In a few areas soils have stratified layers of sand, silt, and clay at a depth of about 60 inches. Many of these soils have an incipient Bh horizon within a depth of 50 inches but this does not alter the usefulness and behavior of the soils.

Rutlege soils are associated with Osier, Lynn Haven, Pantego, Rains, Olanta, Barth, Chipley, and Lakeland soils. Rutlege soils have a thicker dark surface layer than Osier, Rains, Olanta, Barth, Chipley, and Lakeland soils and are more poorly drained than any of these soils. Rutlege soils lack the hardpan horizons of Lynn Haven soils, and they also lack Bt horizons, which are present in Pantego, Rains, Olanta, and Barth soils.

Rutlege loamy sand (Ru).—This is the only Rutlege soil mapped in the survey area. It is in shallow depressions or oval-shaped bays, on uplands, and in areas that border small streams and drainageways.

Included with this soil in mapping are small areas of Osier, Pantego, Rains, and Lynn Haven soils and a few areas where the soils have a sandy loam subsoil.

Most of the acreage is wooded. Stands of gum, water-tolerant oak, cypress, and a few pines are common. A few areas are in pasture. Capability unit Vw-2; woodland group 2w3.

Sunsweet Series

The soils of the Sunsweet series are sloping to moderately steep, moderately deep to deep, and well drained. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is dark grayish-brown loamy fine sand about 7 inches thick. The subsurface layer is pale-brown loamy fine sand about 4 inches thick. The next layer is about 44 inches thick. The upper 9 inches of this layer is reddish-brown, very firm clay. The next 18 inches is mottled, brown to reddish brown, very firm clay that contains 5 to 10 percent plinthite. The next 10 inches is mottled, firm clay that contains 10 to 20 percent plinthite; and the lower 7 inches is mottled, firm sandy clay. The underlying material is dominantly strong-brown loamy sand to a depth of 75 inches.

Sunsweet soils are low in content of organic matter. Permeability is moderately slow. Runoff is rapid, and available water capacity is medium.

Representative profile of Sunsweet loamy fine sand, 6 to 10 percent slopes, in an idle field in Florence County, about 3 miles northeast of Florence, one-half mile east of the intersection of State Highways 26 and 343, and 100 feet south of the field road:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) loamy fine sand; weak, fine, granular structure; very friable; many fine roots; slightly acid (pH 6.4); abrupt, smooth boundary.

A2—7 to 11 inches, pale-brown (10YR 6/3) loamy fine sand; weak, fine, granular structure; very friable; many fine roots and pores; strongly acid (pH 5.3); clear, smooth boundary.

B21t—11 to 20 inches, reddish-brown (5YR 5/4) clay; few, fine, faint, red and strong-brown mottles; strong, medium, subangular blocky structure; very firm; continuous clay films on faces of peds; few fine roots; common fine pores; extremely acid (pH 4.3); gradual, wavy boundary.

B22t—20 to 38 inches, brown (7.5YR 5/4) to reddish-brown (5YR 5/4) clay; common, medium, distinct, red (2.5YR 4/8) mottles and few, fine, distinct, pale-brown mottles; strong, medium, subangular blocky structure; very firm; continuous clay films on faces of peds; few fine roots; common fine pores; soft plinthite, 5 to 10 percent by volume; extremely acid (pH 4.3); gradual, wavy boundary.

B23t—38 to 48 inches, mottled red (2.5YR 4/8), gray (10YR 6/1), strong-brown (7.5YR 5/6), yellowish-brown (10YR 5/8), and very pale brown (10YR 7/3) clay; moderate, medium, subangular blocky structure; firm; continuous clay films on faces of peds; few decaying medium and fine roots; few fine pores; few fine mica flakes; soft plinthite, 10 to 20 percent by volume; extremely acid (pH 4.4); gradual, wavy boundary.

B3—48 to 55 inches, mottled red (10R 4/6), reddish-yellow (7.5YR 6/8), yellowish-brown (10YR 5/6), and gray (10YR 5/1)

sandy clay; platy structure; firm; few fine mica flakes; extremely acid (pH 4.4); abrupt, wavy boundary.

IIC—55 to 75 inches, strong-brown (7.5YR 5/8) loamy sand; few, fine, distinct, light-gray mottles in clay and clay loam material; discontinuous layer of iron-cemented sand less than one-half inch thick at top of horizon; single grained; slightly brittle to loose; few fine mica flakes; very strongly acid (pH 4.6).

The solum ranges from 40 to more than 60 inches in thickness. Reaction in the A horizon is slightly acid to strongly acid. The A horizon is 4 to 18 inches thick. The A1 or Ap horizon, which is 4 to 10 inches thick, is dark grayish brown, grayish brown, or brown. In places in wooded areas there is a very dark grayish-brown A11 horizon 2 to 5 inches thick. The A2 horizon ranges in thickness from 2 to 12 inches and is pale brown or light yellowish brown in color. The A2 horizon is lacking in places.

Reaction in the B horizon is strongly acid to extremely acid. In places there is a yellowish-brown, strong-brown, or yellowish-red sandy clay loam B1 horizon 2 to 5 inches thick. The B2t horizon ranges from 20 to more than 30 inches in thickness. It is strong-brown, yellowish-red, or red clay loam or clay and commonly is mottled with yellowish brown, strong brown, yellowish red, red, and gray. Soft plinthite (5 to 15 percent by volume) occurs in this horizon, generally within a depth of 15 to 20 inches. The upper few inches, however, is often free of plinthite. The B2t horizon is firm to very firm and has moderate to strong angular and subangular blocky structure. The B3 horizon is highly mottled sandy loam, sandy clay loam, or sandy clay 7 inches or more thick. The B3 horizon is lacking in places. The C horizon is highly variable in color. The texture is sandy loam, loamy sand, or sand. Finer material is present in some places.

Sunsweet soils are associated with Fuquay, Wagram, Lakeland, Norfolk, and Varina soils. They have a subsoil with an accumulation of clay, which is lacking in Lakeland soils. Sunsweet soils have a thinner surface layer than Fuquay and Wagram soils. They have more clay in the subsoil than Norfolk and Varina soils.

Sunsweet loamy fine sand, 6 to 10 percent slopes (SuC).—This soil is in narrow areas parallel to streams and drainageways. It has the profile described as representative for the series.

Included with this soil in mapping are areas of Varina, Faceville, Norfolk, Orangeburg, and Wagram soils; eroded spots, less than 2 acres in size, where the subsoil is exposed; long, narrow areas, less than 200 feet wide, of soils that formed in alluvium along drainageways or small streams; areas of soils that have slopes of 4 to 6 percent; and areas of soils that have slopes of 10 to 12 percent.

The plow layer is easy to keep in good tilth except in areas that have less than 6 inches of sandy surface material. Crops respond well to fertilizer and lime. About 70 percent of this soil is wooded. The rest is in crops, is pasture, or is idle. Principal crops are corn, soybeans, small grain, and pasture grasses. This soil is generally difficult to maintain in cultivation because of the short, irregular slopes. It erodes easily. Capability unit IIIe-3; woodland group 3c2.

Sunsweet loamy fine sand, 10 to 25 percent slopes(SuE).—This soil is on narrow, irregular slopes along small drainageways and on the breaks from the upland to the flood plains of some of the larger streams.

Included with this soil in mapping are small areas of Lucy, Wagram, and Lakeland soils and some small areas that have been eroded, in some places exposing the subsoil. A few shallow gullies are also included in some areas.

All of the acreage is wooded. Loblolly pine is mixed with oaks, sweetgum, and other hardwood trees. Capability unit VIIe-2; woodland group 3c2.

Swamp

Swamp (Sw) occurs on nearly level areas along some rivers and major drainageways. These areas are generally from one-half mile to one mile wide and are covered by 1 to more than 3 feet of water most of the time. In these areas are many shallow, indefinite stream channels, oxbows, and open lakes.

The swamp areas generally are too inaccessible for orderly examination and classification of the soils. The soils cannot be used for farming without extensive reclamation by dikes and drainage ditches.

Vegetation consists of tupelo gum, blackgum, cypress, water-tolerant oaks, and a thick understory of vines, ferns, shrubs, and other water-tolerant plants. This land type is wooded. Capability unit VIIw-1; woodland group not classified.

Troup Series

The soils of the Troup series are nearly level to strongly sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is very dark gray sand about 4 inches thick. The subsurface layer is sand about 50 inches thick. The upper part of this layer is pale brown, and the lower part is very pale brown. The next layer extends to a depth of 82 inches. The upper 6 inches is yellowish brown sandy loam, and the lower 22 inches is mottled sandy clay loam.

Troup soils are low in content of organic matter. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Runoff is slow, and available water capacity is low.

Representative profile of Troup sand, 0 to 6 percent slopes, in a wooded area in Sumter County, about 1 1/2 miles south of Dalzell, on west side of State Highway 91, and about one-half mile south of intersection of State Highways 91 and 364:

O1—1/2 inch to 0, partly decomposed mixed forest litter.

A1—0 to 4 inches, very dark gray (10YR 3/1) sand; weak, fine, granular structure; loose; many fine and medium roots; many fine pores; extremely acid (pH 4.3); clear, smooth boundary.

A21—4 to 24 inches, pale-brown (10YR 6/3) sand; single grained; loose; common fine and medium roots; common fine and medium pores; very strongly acid (pH 5.0); gradual, wavy boundary.

A22—24 to 54 inches, very pale brown (10YR 7/4) sand; single grained; loose; few medium roots; common fine and medium pores; strongly acid (pH 5.2); clear, smooth boundary.

B1—54 to 60 inches, yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable; slightly firm and brittle when dry; common fine and medium pores; strongly acid (pH 5.1); gradual, wavy boundary.

B21t—60 to 70 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay loam; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; few fine pores; red mottles are firm; very strongly acid (pH 4.9); gradual, wavy boundary.

B22t—70 to 82 inches, mottled yellowish-brown (10YR 5/6), strong-brown (7.5YR 5/6), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay loam; weak, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; gray portion is sandy clay; red mottles are very firm; very strongly acid (pH 4.8).

The solum is more than 80 inches thick. Reaction is strongly acid to extremely acid throughout the profile. The A horizon commonly is 41 to 55 inches thick. In a few places it is as much as 68 inches thick. The Ap horizon, 7 to 10 inches thick, is commonly dark grayish brown but in places is grayish brown. In wooded areas the A1 horizon is mostly 2 to 6 inches thick. It is dark gray, very dark gray, dark grayish brown, and grayish brown. The A2 horizon is commonly 32 to 50 inches thick, but in places it is as much as 58 inches thick. It is very pale brown or pale brown, light yellowish brown, or yellowish brown. The A2 horizon often contains pockets of clean sand grains. The B1 horizon commonly is 3 to 16 inches of yellowish-brown or strong-brown loamy sand or sandy loam. The B2t horizon often extends to a depth of more

than 80 inches. It is yellowish brown, strong brown, or yellowish red sandy loam or sandy clay loam. The lower part commonly is mottled with red, yellowish red, strong brown, yellowish brown, pale brown, gray, or light gray. In places the B2t horizon contains a few plinthite nodules (less than 5 percent by volume). In places the B3 horizon is at a depth of less than 80 inches. If this horizon is present, it is yellow, yellowish-brown, or strong-brown loamy sand or sandy loam that has mottles of red, brown, or gray.

Troup soils are associated with Norfolk, Orangeburg, Wagram, Lucy, Pocalla, Lakeland, and Kershaw soils. Troup soils have thicker surface and subsurface horizons than Norfolk, Orangeburg, Wagram, or Pocalla soils. They have a loamy subsoil, which is lacking in Lakeland and Kershaw soils.

Troup sand, 0 to 6 percent slopes (TrB).—This soil has the profile described as representative for the series.

Included with this soil in mapping are small areas of Lakeland, Wagram, and Pocalla soils, and a few slight depressions, less than 4 acres in size, of wet soils. The latter areas are shown on the map by wet spot symbols.

This soil is easily tilled throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

About 75 percent of the acreage is wooded. The rest is in crops or is pasture. Principal crops are corn, cotton, soybeans, watermelons, small grain, Coastal bermudagrass, bahiagrass, and sericea lespedeza. The soil is droughty. Soil blowing is a hazard on some of the larger cultivated fields. Capability unit IIIs-1; woodland group 3s2.

Troup sand, 6 to 15 percent slopes (TrD).—This soil has narrow, irregular slopes.

Included with this soil in mapping are areas of Lakeland and Wagram soils and a few areas of soils that have slopes of more than 15 percent.

Most of the acreage is wooded. A few areas are in pasture. Pasture plants commonly are Coastal bermudagrass, bahiagrass, and sericea lespedeza. Capability unit VIs-1; woodland group 3s2.

Varina Series

The soils of the Varina series are nearly level to gently sloping, deep, and well drained. They formed in clayey Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown loamy fine sand about 8 inches thick. The subsurface layer is very pale brown loamy fine sand about 7 inches thick. The next layer extends to a depth of 72 inches. The upper 21 inches of this layer is yellowish-brown sandy clay; the next 10 inches is yellowish-brown sandy clay containing 8 to 10 percent plinthite; and the lower 26 inches is mottled yellowish-brown sandy clay loam containing 12 to 20 percent plinthite.

Varina soils are low in content of organic matter, permeability is moderate in the upper part of the subsoil and slow in the lower part. Runoff is slow to moderate. Available water capacity is medium.

Representative profile of Varina loamy fine sand, 0 to 2 percent slopes, in Florence County, at the Clemson Pee Dee Experiment Station, 300 feet southwest of U.S. Highway 52, and 100 feet west of pecan orchard in the third plot from the highway:

Ap—0 to 8 inches, grayish-brown (10YR 5/2) loamy fine sand; weak, fine, granular structure; very friable; many fine roots; few fine pores; slightly acid (pH 6.3); clear, wavy boundary.

A2—8 to 15 inches, very pale brown (10YR 7/3) loamy fine sand; weak, fine, granular and subangular blocky structure; slightly brittle when dry; very friable; few medium and fine roots; few fine pores; common medium root channels filled with Ap material; few fine iron concretions, 2 to 5 millimeters in size; slightly acid (pH 6.2); clear, smooth boundary.

B21t—15 to 22 inches, yellowish-brown (10YR 5/6) sandy clay; weak and moderate, medium, subangular blocky structure; friable; slightly sticky; patchy clay films on faces of peds; few fine roots; few fine iron concretions, 2 to 9 millimeters in size; common and medium pores; medium acid (pH 5.7); gradual, smooth boundary.

B22t—22 to 36 inches, yellowish-brown (10YR 5/6) sandy clay; moderate, medium, subangular blocky structure; friable; slightly sticky; thick patchy clay films on faces of peds; few fine roots; common fine pores; common fine iron concretions, 5 to 9 millimeters in size and few medium concretions, 15 to 20 millimeters in size; few plinthite; medium acid (pH 5.7); gradual, wavy boundary.

B23t—36 to 46 inches, yellowish-brown (10YR 5/6) sandy clay; moderate, medium, subangular blocky structure; friable; slightly sticky; few iron concretions, 5 to 15 millimeters in size; thick patchy clay films on faces of peds; few fine pores; common (8-10%), medium, prominent, yellowish-red (5YR 4/8 and 5/8) soft plinthite nodules; very strongly acid (pH 4.8); diffuse, wavy boundary.

B24t—46 to 57 inches, yellowish-brown (10YR 5/6) sandy clay loam; common, medium, faint, light yellowish-brown (10YR 6/4) mottles; moderate, medium, subangular blocky structure; friable; thick clay films on faces of most peds; few fine pores; many (12-15%) yellowish-red (5YR 5/8) and red (2.4YR 4/8) soft plinthite and few fine iron concretions, 5 to 15 millimeters in size; strongly acid (pH 5.2); diffuse, wavy boundary.

B25t—57 to 72 inches, yellowish-brown (10YR 5/6) sandy clay loam; common, coarse, faint, pale-brown (10YR 6/3) mottles; many, coarse, gray (10YR 6/1) mottles in lower part; weak to moderate, medium, subangular blocky structure; friable; thin patchy clay films on faces of peds; few fine pores; common (20%), soft plinthite nodules; very strongly acid (pH 4.8); diffuse, wavy boundary.

The solum is more than 70 inches thick. A few small hard sesquioxide nodules commonly occur throughout the profile.

The A horizon is 6 to 15 inches thick. Reaction is slightly acid to medium acid. The Ap horizon, 5 to 10 inches thick, commonly is grayish brown or brown. In places it is pale brown, light brownish gray, grayish brown, dark grayish brown, and dark gray. The A2 horizon, if present, is 2 to 7 inches thick, and commonly is pale brown or very pale brown loamy fine sand or fine sandy loam.

The upper part of the B horizon is strongly acid to medium acid in reaction, and the lower part is strongly acid to very strongly acid. The horizon is more than 50 inches thick and commonly is directly below the A horizon. The Bt horizons are dominantly yellowish brown or strong brown mottled with yellowish red or red in the middle and lower part and gray or light gray in the lower part. Soft plinthite increases in amount from the middle of the horizon downward. The maximum amount of plinthite, ranging from 8 to 35 percent by volume, occurs at a depth of 36 to 60 inches. The upper 20 inches of the horizon is sandy clay, clay loam, or clay. The texture of the B horizon that is part plinthite is sandy clay loam, sandy clay, or clay.

Varina soils are associated with Norfolk, Goldsboro, Faceville, Duplin, and Sunsweet soils. They have horizons within a depth of 60 inches of the surface that are more than 5 percent plinthite, but plinthite is not present in Norfolk, Goldsboro, Faceville, and Duplin soils. Varina soils have a thicker and more friable subsoil than Sunsweet soils, and plinthite is deeper in Varina soils than in Sunsweet soils.

Varina loamy fine sand, 0 to 2 percent slopes (VaA).—This soil has the profile described as representative for the series.

Included with this soil in mapping are small areas of Faceville, Norfolk, Orangeburg, and Duplin soils; a few areas of soils that are slightly less than 35 percent clay in the subsoil; and areas of wet Coxville and Pantego soils in slight depressions less than 4 acres in size. These areas are shown on the map by wet spot symbols. Also included in places are areas of soils that have a loamy sand surface layer and a few long, narrow areas where slopes are 2 to 4 percent.

This soil is easy to maintain in good tilth. Crops respond well to fertilizer and lime.

Most of the acreage is in row crops. The principal crops are cotton, tobacco, corn, and soybeans. Capability unit I-2; woodland group 3o1.

Varina loamy fine sand, 2 to 6 percent slopes (VaB).—This soil is on broad ridges and on narrower slopes parallel to streams and drainageways.

Included with this soil in mapping are small areas of Norfolk, Orangeburg, Faceville, and Sunsweet soils; a few areas of plinthic soils that are slightly less than 35 percent clay in the subsoil; a few areas of eroded soils that have a sandy loam surface layer about 4 inches thick; some small spots, less than one acre in size, where erosion has exposed the subsoil; areas of soils that have slopes of 1 to 2 percent; and areas of soils that have slopes of 6 to 8 percent. Coxville and Pantego soils are included in a few depressions less than 4 acres in size. These wet areas are shown by wet spot symbols. Also included in places are soils that have a loamy sand surface layer and some long narrow areas, less than 200 feet wide, of soils that formed in alluvium along drainageways or small streams.

About 80 percent of the acreage is in row crops and pasture. The rest is wooded. Principal crops grown are cotton, tobacco, corn, soybeans, Coastal bermudagrass, and bahiagrass. Capability unit IIe-2; woodland group 3o1.

Vaucluse Series

The soils of the Vaucluse series are gently sloping to strongly sloping and well drained. They formed in beds of unconsolidated sands and clays of the Coastal Plain.

In a representative profile the surface layer is dark grayish-brown loamy sand about 3 inches thick. The subsurface layer is very pale brown fine sand about 15 inches thick. The next layer is yellowish-red, firm sandy clay loam about 9 inches thick. Below this is about 37 inches of mottled, very firm, brittle sandy clay that grades to sandy clay loam in the lower 8 inches. The underlying material is light-gray sandy clay loam to a depth of 82 inches.

Vaucluse soils are low in content of organic matter. Permeability is moderately slow to slow. Runoff is moderate to rapid, and available water capacity is low.

Representative profile of Vaucluse loamy sand, 2 to 6 percent slopes, in a wooded area in Sumter County, 0.8 mile north of Gaillard Crossroads on State Highway 43, and 30 feet east of the highway:

A1—0 to 3 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; many fine and medium roots; many, clean, coarse sand grains; very strongly acid (pH 4.6); clear, smooth boundary.

A2—3 to 18 inches, very pale brown (10YR 7/4) fine sand; single grained; loose; many fine and medium roots; many, clean, coarse sand grains; very strongly acid (pH 5.0); clear, smooth boundary.

B2t—18 to 27 inches, yellowish-red (5YR 5/8) sandy clay loam; few, fine, faint, red mottles, and few, fine, prominent, brownish-yellow mottles; moderate, medium, subangular blocky structure; firm; patchy, distinct clay films on faces of peds and in old root channels; few fine roots and pores; many, clean, coarse sand grains and few quartz pebbles; very strongly acid (pH 4.9); clear, smooth boundary.

Bx1—27 to 38 inches, mottled brown (10YR 5/3), yellow (10YR 7/6), red (2.5YR 4/8), and gray (10YR 6/1) sandy clay; massive; very firm; hard in place and brittle when dry; patchy clay films on faces of peds; common large pores; many, clean, coarse sand grains; few fine mica flakes; very strongly acid (pH 4.9); gradual, smooth boundary.

Bx2—38 to 56 inches, coarsely mottled brown (10YR 5/3), red (2.5YR 4/8), yellow (10YR 7/6), gray (10YR 6/1), and purple sandy clay; medium platy structure; very firm; hard in place and brittle when dry; patchy clay films on faces of peds; common medium pores; many, clean, coarse sand grains; few quartz pebbles; few fine mica flakes; very strongly acid (pH 4.9); gradual, smooth boundary.

Bx3—56 to 64 inches, purple sandy clay loam; common, medium, distinct, brown (10YR 5/3), yellow (10YR 7/6), and light-gray (10YR 7/1) mottles; massive; very firm; hard in place and brittle when dry; many, clean, coarse sand grains; many quartz pebbles; common mica flakes; very strongly acid (pH 4.8); gradual, smooth boundary.

C—64 to 82 inches, light-gray (5Y 7/1) sandy clay loam; many fine, distinct, brown, yellow, and red mottles; massive; friable; many, clean, coarse sand grains; few quartz pebbles; many mica flakes; very strongly acid (pH 4.7).

The solum ranges in thickness from 30 to more than 65 inches. Depth to the fragipan generally is 20 to 35 inches. Reaction is strongly acid to very strongly acid throughout the profile. Few to many ironstone fragments are throughout some profiles.

The A horizon is 3 to 20 inches thick. The A1 or Ap horizon, 2 to 8 inches thick, commonly is dark grayish-brown or dark-gray loamy sand. In areas of eroded soils the A horizon is brown, dark yellowish-brown, or light yellowish-brown sandy loam. The A2 horizon is brown, pale brown, or very pale brown loamy sand or sand 3 to 18 inches thick. The B2t horizon is yellowish-red, or redder, sandy loam or sandy clay loam that commonly has red and brown mottles. Thickness generally ranges from 6 to 25 inches. The Bx horizon is 10 to 40 inches thick. It commonly is mottled with brown, red, yellow, and gray and is purple in the lower part. The Bx horizon is sandy loam, sandy clay loam, or sandy clay. It is weakly to strongly cemented and is brittle. The C horizon is highly variable in color and texture. It is commonly mottled with red, brown, yellow, and gray. Texture of the C horizon is loamy sand, sandy loam, sandy clay loam, or sandy clay. In places there are thin discontinuous sheets of ironstone 1 to 2 inches thick.

Vaucluse soils are associated with the Irvington, Orangeburg, Wagram, Troup, Lakeland, and Kershaw soils. They have a fragipan which the Orangeburg, Wagram, Troup, Lakeland, and Kershaw soils lack, and they are redder in the upper part of the subsoil than Irvington soils.

Vaucluse loamy sand, 2 to 6 percent slopes (VcB).—This soil has the profile described as representative for the series.

Included with this soil in mapping are small areas of Wagram, Irvington, Faceville, and Orangeburg soils; a few eroded spots less than 2 acres in size; and some small areas where slopes are 6 to 8 percent. Also included are a few areas of soils that have a sandy clay texture in the subsoil above the fragipan.

This soil is easily tilled. About 80 percent is wooded. The rest is in crops, is pasture, or is idle. Where the soil is cultivated, principal crops are cotton, corn, soybeans, and small grain. Bahiagrass, bermudagrass, and sericea lespedeza are the principal plants used for pasture. Erosion is a hazard on this soil. Capability unit IIe-4; woodland group 3o1.

Vaucluse loamy sand, 6 to 10 percent slopes (VcC).—Included with this soil in mapping are small areas of Wagram, Irvington, Sunsweet, and Faceville soils; a few eroded spots less than 2 acres in size; small areas where slopes are 4 to 6 percent; and areas where slopes are 10 to 12 percent. Also included are a few areas of soils that have sandy clay in the subsoil above the fragipan.

About 90 percent of the acreage is wooded. The rest is in crops, is pasture, or is idle. Principal crops are corn, soybeans, small grain, bahiagrass, Coastal bermudagrass, and sericea lespedeza. Erosion is a severe hazard. Capability unit IIIe-4; woodland group 3o1.

Vaucluse loamy sand, 10 to 15 percent slopes (VcD).—This soil is on ridges generally along streams and drainageways.

Included with this soil in mapping are a few small areas of Sunsweet, Irvington, and Wagram soils; a few areas of eroded soils; a few shallow gullies; areas where slopes are 8 to 10 percent; and areas where slopes are more than 15 percent.

Almost all the acreage is wooded. Erosion is a severe hazard. Capability unit VIe-2; woodland group 3o1.

Vaucluse sandy loam, 3 to 8 percent slopes, eroded (VeC2).—This soil has a profile similar to that described as representative for the series, but it has a light yellowish-brown sandy loam surface layer 3 to 5 inches thick.

Included with this soil in mapping are small areas of Irvington, Sunsweet, and Faceville soils and, in places, spots less than 2 acres in size where the subsoil is exposed. Also included are a few small areas where slopes are 8 to 12 percent and small areas of soils that have a loamy sand surface layer 5 to 10 inches thick.

Most of the acreage is wooded. Erosion is a severe hazard, and in places windthrow is a significant hazard. Capability unit IVe-4; woodland group 4d2.

Wagram Series

The soils of the Wagram series are nearly level to strongly sloping, deep, and well drained. They formed in loamy Coastal Plain sediment.

In a representative profile the surface layer is grayish-brown sand about 7 inches thick. The subsurface layer is light yellowish-brown fine sand about 19 inches thick. The next layer extends to a depth of 74 inches. The upper 33 inches of this layer is dominantly yellowish-brown, friable sandy clay loam; the lower 15 inches is mottled, firm sandy clay.

Wagram soils are low in organic-matter content. Permeability is rapid in the surface layer and moderate in the subsoil. Runoff is slow to moderate. Available water capacity is low to medium.

Representative profile of Wagram sand, 0 to 6 percent slopes, in a field in Sumter County 2.8 miles east of the junction of State Highways 33 and 40, and 100 feet south of State Highway 33:

Ap—0 to 7 inches, grayish-brown (2.5Y 5/2) sand; weak, medium, granular structure; loose; many fine and medium roots; medium acid (pH 5.7); clear, smooth boundary.

A2—7 to 26 inches, light yellowish-brown (2.5Y 6/4) fine sand; weak, medium, granular structure; loose; many fine roots; many fine pores; medium acid (pH 5.6); clear, smooth boundary.

B21t—26 to 35 inches, yellowish-brown (10YR 5/8) sandy clay loam; weak, medium, subangular blocky structure; friable; patchy faint clay films on faces of peds and in pores; many fine roots; many fine pores; strongly acid (pH 5.2); gradual, smooth boundary.

B22t—35 to 48 inches, yellowish-brown (10YR 5/8) sandy clay loam; few, fine distinct, yellowish-red and red mottles; weak, medium, subangular blocky structure; friable; patchy faint clay films on faces of peds and in pores; few fine pores; few plinthite nodules; strongly acid (pH 5.2); gradual, smooth boundary.

B23t—48 to 59 inches, yellowish-brown (10YR 5/8) sandy clay loam; common, coarse, distinct, red (2.5YR 4/8) mottles, and few, fine, distinct, yellowish-red mottles; moderate, medium, subangular blocky structure; friable; patchy faint clay films on faces of peds and in pores; few fine pores; few plinthite nodules; strongly acid (pH 5.1); clear, smooth boundary.

B31—59 to 65 inches, mottled brownish-yellow, yellowish-red, and red sandy clay; weak, medium, subangular blocky structure; firm; few plinthite nodules; strongly acid (pH 5.2); clear, smooth boundary.

B32—65 to 74 inches, mottled red, brown, yellow, and gray sandy clay; weak, medium, subangular blocky structure; firm; few plinthite nodules; strongly acid (pH 5.2).

The solum commonly is more than 70 inches thick. Reaction in the A horizon is medium acid to strongly acid, and in the B horizon it is strongly acid to very strongly acid. The A horizon ranges in thickness from 21 to 40 inches. The Ap or A1 horizon, 6 to 10 inches thick, is grayish brown, dark grayish brown, brown, or light brownish gray. The A2 horizon is loamy fine sand, loamy sand, fine sand, or sand 15 to 34 inches thick. It commonly is light yellowish brown or very pale brown and in places is pale brown or brownish yellow. The B1 horizon, if present, is 3 to 8 inches of brownish-yellow, yellowish-brown, or strong-brown sandy loam or sandy clay loam. The B2t horizon is brownish-yellow, yellowish-brown, or strong brown sandy clay loam, 24 to 42 inches thick. The lower half in most places is mottled with strong brown, yellowish red, red, pale brown, and occasionally gray. A few plinthite nodules occur in some places but are less than 5 percent by volume. The B3 horizon ranges in thickness from about 6 to 31 inches. It is commonly mottled with yellowish-brown, brownish yellow, strong brown, yellowish red, red, pale brown, and gray. Texture is sandy loam, sandy clay loam, or sandy clay.

Wagram soils are associated with Norfolk, Orangeburg, Goldsboro, Irvington, Vaucluse, Fuquay, Pocalla, Troup, and Lakeland soils. They have a thicker surface layer than Norfolk, Orangeburg, Irvington, and Vaucluse soils; they lack the plinthite of Fuquay soils; and they lack the sandy A'2 horizons that are characteristic of Pocalla soils. Wagram soils have Bt horizons which are lacking in Lakeland soils.

Wagram sand, 0 to 6 percent slopes (WgB).—This soil has the profile described as representative for the series.

Included with this soil in mapping are small areas of Norfolk, Fuquay, Irvington, Lucy, Pocalla, Troup, and Lakeland soils; some small wet areas, less than 4 acres in size, of Coxville, Rains, and Pantego soils; and a few long areas, too narrow to delineate, of soils that formed in alluvium. Also included are a few areas of soils that have slopes of 6 to 10 percent; soils that have a clayey subsoil; and soils that have a fragipan.

This soil is easily tilled throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

About 70 percent of the acreage is in row crops or is pasture. The rest is wooded. Principal crops are cotton, tobacco, corn, soybeans, Coastal bermudagrass, bahiagrass, and sericea lespedeza. These soils are slightly droughty during periods of low rainfall. In places soil blowing is a hazard in larger fields. Capability unit IIs-1; woodland group 3s2.

Wagram sand, 6 to 10 percent slopes (WgC).—This sloping soil is in areas parallel to streams and drainageways.

Included with this soil in mapping are areas of Norfolk, Lucy, Irvington, Fuquay, Sunsweet, Troup, and Lakeland soils. Also included are a few long, narrow areas of soils that have slopes of 10 to 15 percent and a few areas of soils that have a fragipan.

This soil is easily tilled throughout a wide range of moisture content. Crops respond well to fertilizer and lime.

About 75 percent of the acreage is wooded. The rest is in crops or is pasture. Principal crops are corn and soybeans, Coastal bermudagrass, bahiagrass, and sericea lespedeza. Erosion is a hazard when this soil is used for row crops. Capability unit IIIe-5; woodland group 3s2.

Wagram sand, 10 to 15 percent slopes (WgD).—This soil is in areas parallel to streams and drainageways.

Included with this soil in mapping are a few small areas of Lucy, Fuquay, Sunsweet, Troup, and Lakeland soils, and a few long, narrow areas of soils that formed in alluvium. Also included in places are small areas of soils that have slopes of 6 to 10 percent and areas of soils that have slopes of more than 15 percent.

Most of the acreage is in mixed hardwood and pine. Erosion is the chief management concern. Capability unit IVe-5; woodland group 3s2.

Wahee Series

The Wahee series consists of nearly level, somewhat poorly drained soils. These soils formed in stream deposits of clayey sediment.

In a representative profile the surface layer is black fine sandy loam about 3 inches thick. The subsurface layer is light brownish-gray fine sandy loam about 4 inches thick. The next layer is about 64 inches thick. The upper 5 inches of this layer is pale-brown, firm loam; the next 19 inches is mottled, very firm clay loam; the next 40 inches is mainly mottled gray, very firm silty clay loam. The underlying material is light-gray coarse sand.

Wahee soils are moderate in content of organic matter. Permeability is slow. Runoff is slow, and available water capacity is medium.

Representative profile of Wahee fine sandy loam in a wooded area in Florence County, about 3 1/2 miles northwest of Coward on State Highway 147, 1 mile northeast of intersection of State Highways 147 and 55, and 150 feet northwest of State Highway 147:

A1—0 to 3 inches, black (10YR 2/1) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; very strongly acid (pH 4.6); clear, smooth boundary.

A2—3 to 7 inches, light brownish-gray (10YR 6/2) fine sandy loam; few, fine, distinct, yellowish-brown mottles; weak, fine, granular structure; very friable; common fine roots and pores; strongly acid (pH 5.5); clear, wavy boundary.

B1—7 to 12 inches, pale-brown (10YR 6/3) loam; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, medium, subangular blocky structure; firm; thin patchy clay films on faces of peds; few fine roots and pores; very strongly acid (pH 5.0); clear, wavy boundary.

B21t—12 to 31 inches, mottled yellowish-brown (10YR 5/8), light brownish-gray (10YR 6/2), and gray (10YR 6/1) clay loam; few, medium, prominent, yellowish-red (5YR 5/6) mottles; strong, medium, subangular and angular blocky structure; very firm; thick, continuous, prominent, light brownish-gray (10YR 6/2) clay films on faces of peds; few fine roots along ped faces; very strongly acid (pH 4.9); gradual, wavy boundary.

B22tg—31 to 54 inches, gray (10YR 6/1) silty clay loam; many, coarse, distinct, brownish-yellow (10YR 6/6) mottles and few, medium, prominent, yellowish-red (5YR 5/6) mottles; moderate, medium, subangular blocky structure; very firm; thin, continuous, distinct clay films on faces of peds; few fine roots along ped faces; very strongly acid (pH 5.0); gradual, wavy boundary.

B31tg—54 to 61 inches, gray (10YR 6/1) clay loam; few, medium, distinct, brownish-yellow (10YR 6/6) mottles; weak, medium, subangular blocky structure; firm; thin patchy clay films on faces of some peds; few fine roots; strongly acid (pH 5.2); gradual, wavy boundary.

B32g—61 to 71 inches, light-gray (10YR 7/1) loam; few, medium, distinct, brownish-yellow (10YR 6/6) mottles; weak, coarse, subangular blocky structure; friable; strongly acid (pH 5.2); gradual, wavy boundary.

IIC—71 to 80 inches, light-gray (10YR 7/1) coarse sand that has a few pockets of silt loam; few, fine, distinct, yellowish-brown mottles; single grained; loose; strongly acid (pH 5.4).

The solum ranges from 42 to 75 inches in thickness. Reaction is strongly acid to very strongly acid throughout the profile.

The total thickness of the A horizon ranges from 5 to 12 inches. The A1 or Ap horizon, which is 2 to 8 inches thick, is black, very dark gray, dark gray, or grayish brown. Where the A1 horizon is very dark grayish brown, dark grayish brown, or black, it is not more than 3 inches thick. The A2 horizon, which is 2 to 5 inches thick, is light brownish gray, pale brown, or light yellowish brown. The B1 horizon, if present, is very pale brown, pale-brown, light yellowish-brown, or yellowish-brown loam, silt loam, or clay loam 2 to 6 inches thick. The B2t horizon is mottled yellowish-brown, gray, and red clay loam, clay, silty clay, or silty clay loam in the upper 5 to 20 inches. The lower part is gray. The B2t horizon is firm to very firm, sticky, and plastic. It has moderate to strong structure. The B3 horizon is predominantly gray or light-gray clay loam or silty clay loam that has few to many mottles ranging from pale olive to red. In places texture is loam, sandy clay loam, and sandy clay. The C horizon commonly is light-gray or gray sand, but in places it is sandy loam or loamy sand.

Wahee soils are associated with the Duplin, Kalmia, Cahaba, Johns, and Leaf soils. They are more poorly drained than Duplin, Kalmia, Cahaba, and Johns soils, and they are better drained than Leaf soils.

Wahee fine sandy loam (Wh).—This is the only Wahee soil mapped in the survey area. It is in low areas adjacent to the larger streams.

Included with this soil in mapping are small areas of Duplin, Johns, and Leaf soils, and a few areas of moderately well drained soils that have a clayey subsoil and a combined surface layer and subsoil thickness of 40 to 60 inches.

Tilth is only fair on most areas of this soil. Crops respond well to fertilizer and lime.

About 60 percent of the areas of this soil is wooded. The rest is in row crops or is pasture. Principal crops are corn, soybeans, oats, pasture grasses, and some cotton and tobacco. Capability unit IIIw-3; woodland group 2w8.

Wehadkee Series

The soils of the Wehadkee series are nearly level and poorly drained. They are on flood plains and are subject to frequent flooding.

In a representative profile the surface layer is mottled light brownish-gray fine sandy loam about 7 inches thick. The next layer is mottled gray and about 41 inches thick. The upper 23 inches of this layer is fine sandy loam, the next 12 inches is sandy clay loam, and the lower 6 inches is fine sandy loam. It is underlain by gray and light-gray sand.

Wehadkee soils are moderate in content of organic matter. Permeability is moderate but is impeded by a high water table. Runoff is very slow, and available water capacity is medium.

These soils are mapped in undifferentiated groups.

Representative profile of Wehadkee fine sandy loam in Florence County, about 5 miles east of Scranton, and 100 feet south of U.S. Highway 378 near Lynches River:

A1—0 to 7 inches, light brownish-gray (10YR 6/2) fine sandy loam; many, fine, distinct, strong-brown mottles; weak, medium, granular structure; very friable; many fine and medium roots; many fine and medium pores and wormholes; strongly acid (pH 5.1); clear, smooth boundary.

C1g—7 to 30 inches, gray (10YR 6/1) fine sandy loam; many, medium, distinct, strong-brown (7.5YR 5/6) mottles; massive; friable; common fine and medium roots; many fine and medium pores; strongly acid (pH 5.5); gradual, wavy boundary.

C2g—30 to 35 inches, gray (N 6/0) sandy clay loam; common, fine, distinct, strong-brown mottles that are mostly along old root channels; massive; friable; common fine roots; medium acid (pH 5.8); clear, smooth boundary.

C3g—35 to 42 inches, gray (N 6/0) sandy clay loam; common, fine, distinct, olive-brown mottles; massive; friable; medium acid (pH 6.0); gradual, wavy boundary.

C4g—42 to 48 inches, gray (N 6/0) fine sandy loam; few, fine, distinct, olive-brown mottles; massive; friable; few fine mica flakes; slightly acid (pH 6.1); clear, smooth boundary.

IIC5g—48 to 65 inches, gray (10YR 6/1) and light-gray (10YR 7/2) sand; few, fine, distinct, olive-brown mottles; single grained; loose; few fine mica flakes; neutral (pH 6.8).

The A horizon is fine sandy loam or silt loam 6 to 10 inches thick. It is light brownish gray, grayish brown, dark grayish brown, or dark gray.

The C horizon, at depths between 10 and 40 inches, has a texture of fine sandy loam, fine sandy clay loam, or silty clay loam. At depths between 10 and 40 inches in the C horizon, reaction in these soils is slightly acid to strongly acid. Below a depth of 40 to 50 inches, texture commonly is sand or loamy sand and in places is stratified with sand, silt, and clay. The lower C horizon contains few to common fine mica flakes.

Wehadkee soils are associated with Chastain, Chewacla, Osier, and Johnston soils. They have coarser textures than Chastain soils, and they are more poorly drained than Chewacla soils. Wehadkee soils have loamy underlying material, and the underlying material in Osier and Johnston soils is sandy.

Wehadkee-Chastain association, frequently flooded (Wk).—This mapping unit consists of poorly drained alluvial soils

that occur in an intricate pattern in heavily wooded areas on the flood plains of the Lynches River. Wehadkee-Chastain association, frequently flooded, was mapped at a lower intensity than most other mapping units in this survey.

Wehadkee soils make up about 40 percent of the mapping unit; Chastain soils, about 24 percent, and the remaining 36 percent is Osier, Chewacla, and other alluvial soils. A profile of a Wehadkee soil and a profile of a Chastain soil is given as a part of the series description of each of these soil series.

All of this mapping unit is wooded. Dominant species are water-tolerant hardwoods, some cypress, and a few scattered pines. The entire area floods every year, and water stands on a large part much of the year. Some areas contain many sloughs and old stream channels that are filled with water most of the year. Capability unit VIIw-2; Wehadkee, woodland group 1w9; Chastain, woodland group 2w9.

Wehadkee and Johnston soils, frequently flooded (Wn).—This mapping unit consists of poorly drained and very poorly drained soils that formed in loamy and sandy alluvial sediment. These soils occur on the flood plains along small streams. Wehadkee and Johnston soils, frequently flooded, was mapped at a lower intensity than most mapping units in this survey.

Wehadkee soils make up about 37 percent of this mapping unit; Johnston soils, about 24 percent; and other soils, the remaining 39 percent. Other soils are Rutlege, Pantego, and Osier soils, and small areas of sandy or wet soils. All of these soils are similar in use and management to the Wehadkee and Johnston soils. A profile of a Wehadkee soil and a profile of a Johnston soil are given as a part of the series description of each of these soil series.

Most of the acreage is woodland that is a mixture of hardwood and pine. The soils flood during heavy rains several times a year. Water stands on some areas for long periods during the year. Summer pastures can be produced under good management if the soils are drained and protected from flooding. Capability unit VIIw-2; woodland group 1w9.

Use and Management of Soils

The soils of Florence and Sumter Counties are used extensively for row crops, close-growing crops, vegetables, and pasture. This section explains how the soils may be used for these main purposes and also as woodland, as wildlife habitat, and in the building of highways, farm ponds, and other engineering structures. Also given are estimated yields of the principal crops under two levels of management.

The management of crops and pasture, of woodland, and of wildlife habitat is discussed by groups of soils. To determine the soils in each of these groups, refer to the "Guide to Mapping Units" at the back of this survey.

Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when used for field crops, the risk of damage when they are so used, and the way they respond to treatment. The grouping does not take into account major and generally expensive land forming that would change slopes, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to horticultural crops or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range; for forest trees, or engineering.

In the capability system, the kinds of soils are grouped at three levels: the capability class, subclass, and unit. These are discussed in the following paragraphs.

Capability Classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, or water supply, or to esthetic purposes. (No class VIII soils in Florence and Sumter Counties.)

Capability Subclasses are soil groups within one class; they are designated by adding a small letter, *e, w, s,* or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there no subclasses, because the soils of this class have few limitations. Class V can contain, at the most, only the subclasses indicated by *w, s,* and *c*, because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation.

Capability Units are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally desig-

nated by adding an Arabic numeral to the subclass symbol, for example, IIe-2, or IIIe-1. Thus, in one symbol, the Roman numeral designates the capability class, or degree of limitation, as defined in the foregoing paragraph; and the Arabic numeral specifically identifies the capability unit within each subclass.

In the following pages the capability units in Florence and Sumter Counties are described and suggestions for the use and management of the soils are given.

Management by capability units[3]

In this subsection each capability unit is described, and some suggestions for use and management of the soils in each unit are given. Erosion losses should be reduced to that tolerance recognized by the soil loss prediction formula for South Carolina. Soil loss tolerance is that amount of soil loss that can be tolerated and still maintain a permanent, productive agriculture. To maintain high yields, it is necessary to apply lime and fertilizer according to the requirements of the crops to be grown and the needs of the soils as indicated by soil tests. Crop residue should be conserved and incorporated with the soil or used as a mulch. To find the soils in each capability unit, refer to the "Guide to Mapping Units" at the back of this survey. The term "suited" in the individual capability units includes well suited, fairly well suited, and not well suited as used in table 2.

[3] L. D. EAGLES, conservation agronomist, Soil Conservation Service, assisted in the preparation of this section.

CAPABILITY UNIT I-1

This unit consists of nearly level, deep or moderately deep, friable, well-drained soils. The surface layer is loamy sand to sandy loam. The subsoil is sandy clay loam or sandy loam.

The soils are suited to tobacco, cotton, corn, soybeans, peanuts, and small grain. Bahiagrass and Coastal bermudagrass are two of the grasses better suited to hay and pasture.

Figure 2.—Windbreak of pine trees protects young cotton plants on Orangeburg loamy sand, 0 to 2 percent slopes.

These soils have very few limitations. If well managed, they can be cropped continuously, and the hazard of erosion is only slight. They can be worked throughout a wide range of moisture content, and they respond well to fertilizer. Winds early in spring cause considerable blowing where the soils are exposed, dry, and freshly plowed. Stripcropping, use of windbreaks, and including perennial grasses in cropping systems are effective means of reducing the loss of soil and the damage to crops (fig. 2).

CAPABILITY UNIT I-2

This unit consists of nearly level, deep, well-drained soils. The surface layer is loamy sand to sandy loam. The subsoil is friable sandy clay or clay.

These soils are suited to cotton, corn, soybeans, tobacco, peanuts, and small grain. Bahiagrass and Coastal bermudagrass are two of the grasses better suited to hay and pasture.

These soils have few limitations. Row crops can be grown each year. The soils can be worked throughout a fairly wide range of moisture content. If the soils are plowed wet, however, they clod. In large fields stripcropping and including perennial grasses in cropping systems are effective means of reducing the loss of soil and damage to crops from soil blowing.

CAPABILITY UNIT IIe-1

This unit consists of gently sloping, deep, friable, well-drained soils. The surface layer is loamy sand to sandy loam. The subsoil is sandy clay loam or sandy loam.

These soils are suited to cotton, corn, tobacco, soybeans, peanuts, peaches, and small grain. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are among the plants better suited to hay and pasture.

Erosion is the chief hazard to soils in this unit. Contour tillage and inclusion of sod crops in cropping systems are sufficient to control erosion on some fields. On other fields terraces and grassed waterways are needed for erosion control. Crop residue kept on or near the surface increases infiltration and reduces erosion. A cropping system that includes close-growing crops at least half the time helps to control erosion. Crops on these soils respond to applications of fertilizer and lime and to other good management practices.

CAPABILITY UNIT IIe-2

This unit consists of gently sloping, deep, well-drained soils. The surface layer is loamy sand to sandy loam. The subsoil is friable sandy clay or clay.

These soils are suited to cotton, corn, soybeans, tobacco, peanuts, and small grain. Bahiagrass, Coastal bermudagrass and sericea lespedeza are among the plants better suited to hay and pasture.

Erosion is the chief hazard to soils in this unit. Contour tillage and including sod crops in cropping systems are effective means of controlling erosion on some fields. On other fields terraces and grassed waterways are needed as additional measures. Crop residue kept on the surface or returned to the soil increases infiltration and reduces erosion. A cropping system that includes close-growing crops at least half of the time helps to control erosion. Crops on these soils respond to applications of fertilizer and lime and to other good management practices.

CAPABILITY UNIT IIe-3

Only Duplin and Exum soils, 2 to 6 percent slopes, is in this unit. These soils are deep and moderately well drained. The surface layer is fine sandy loam. The subsoil is firm clay loam to clay.

These soils are suited to cotton, corn, tobacco, peanuts, soybeans, and small grain. Bahiagrass, tall fescue, white clover, and Coastal bermudagrass are plants suited to pasture and hay.

Management is needed to control erosion, to improve tilth, and to improve drainage in places. Cropping systems that include perennial grasses and close-growing crops planted at least half the time help to control erosion on some fields. Terraces, grassed waterways, and contour tillage are needed on other fields. Crops on these soils respond to lime, fertilizer, and good management.

CAPABILITY UNIT IIe-4

This unit consists of gently sloping, moderately well drained, or well drained soils that are moderately deep to a fragipan.

The soils are suited to cotton, corn, soybeans, tobacco, peanuts, and small grain. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are suitable hay and pasture plants.

Erosion is a hazard on this soil. A cropping system including close-growing crops planted at least half the time helps control erosion and furnish organic matter. A water-disposal system that includes terraces, contour cultivation, and vegetated waterways is needed.

CAPABILITY UNIT IIw-2

This unit consists of nearly level, deep or moderately deep, moderately well drained or somewhat poorly drained soils. The surface layer is loamy sand to fine sandy loam. The subsoil is friable sandy loam to firm sandy clay.

If there is adequate drainage and good management, these soils are suited to tobacco, corn, cotton, soybeans, peanuts, truck crops, and small grain. Bahiagrass, Coastal bermudagrass, dallisgrass, tall fescue, white clover, and annual lespedeza are among the plants better suited to pasture and hay.

Open ditches, tile drains, or a combination of both can be used to drain these soils. Row crops can be grown each year. A suitable cropping system includes close-growing crops half the time. Crops respond well to heavy applications of fertilizer.

CAPABILITY UNIT IIw-4

Congaree loam is the only soil in this unit. It is a deep, nearly level, well-drained soil on the flood plains. It is flooded occasionally for short periods. The surface layer is loam that is underlain by friable silty clay loam to fine sandy loam.

This soil is suited to corn, soybeans, and small grain. Suitable pasture and hay plants are bahiagrass, Coastal bermudagrass, tall fescue, and white clover. In some years, crops are lost or damaged by flooding.

Row crops can be grown each year if all crop residue is conserved and returned to the soil to increase organic-matter content.

CAPABILITY UNIT IIw-5

Irvington loamy sand, 0 to 2 percent slopes, is the only soil in this unit. It is moderately well drained and has a fragipan at moderate depths.

The soil is suited to cotton, corn, tobacco, peanuts, soybeans, and small grain if adequate drainage and good management are provided. Bahiagrass, Coastal bermudagrass,

and sericea lespedeza are plants suitable for hay and pasture.

Close-growing crops should be planted at least half the time. Large amounts of organic matter and fertilizer are needed. Growing and turning under a cover crop every other year helps to maintain the organic-matter content and improve tilth.

CAPABILITY UNIT IIs-1

This unit consists of deep or moderately deep, nearly level to gently sloping, well-drained soils on uplands. The surface layer is sand. The subsoil is friable sandy loam to sandy clay loam.

The soils are suited to cotton, tobacco, corn, peanuts, small grain, and soybeans. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are plants suited to pasture and hay (fig. 3).

These soils are slightly droughty in dry periods. They are easy to till and can be cultivated soon after rains. Large amounts of organic matter and fertilizer are needed to improve tilth, decrease the rate of leaching, and help control soil blowing. A cropping system including close-growing crops at least half the time is needed. Winds early in the spring cause considerable soil blowing in exposed areas that are dry and freshly plowed (fig. 4). Stripcropping with small grain and permanent windbreaks is an effective means of reducing damage to crops and loss of soil.

CAPABILITY UNIT IIIe-1

Orangeburg loamy sand, 6 to 10 percent slopes, is the only soil in this unit. It is a deep, well-drained, friable soil on uplands. The subsoil is sandy clay loam.

The soil is suited to corn, soybeans, tobacco, cotton, peanuts, small grain, and peaches. Bahiagrass, Coastal bermudagrass, and sericea lespedeza are plants suitable for hay and pasture.

Because erosion is a severe hazard, suitable measures to control erosion are needed. Adding large amounts of organic matter and keeping a close-growing crop on the soil two-thirds of the time help to control erosion and improve tilth. If cultivated, terraces, vegetated waterways, contour cultivation, stripcropping, and a suitable cropping system are needed.

CAPABILITY UNIT IIIe-2

Greenville loamy sand, 6 to 10 percent slopes, is the only soil in this unit. It is a deep, well-drained soil on uplands. The subsoil is friable sandy clay or clay.

This soil is suited to cotton, corn, soybeans, peanuts, tobacco, small grain, bahiagrass, Coastal bermudagrass, tall fescue, white clover, and sericea lespedeza.

Figure 3.—Baling Coastal bermudagrass hay on Wagram sand, 0 to 6 percent slopes.

Figure 4.—Soil blowing on Wagram sand, 0 to 6 percent slopes.

Erosion is the chief hazard. If this soil is cultivated, grassed waterways, terraces, contour tillage, crop residue management, stripcropping, and a cropping system that includes perennial grasses are needed to control erosion.

CAPABILITY UNIT IIIe-3

Sunsweet loamy fine sand, 6 to 10 percent slopes, is the only soil in this unit. It is well drained, moderately deep to deep over sandy loam to sand. It is on uplands. The subsoil is firm to very firm, heavy clay loam to clay that contains plinthite.

Most of this soil has short, irregular slopes, and it erodes easily. It is suited to cotton, corn, soybeans, and small grain. Bahiagrass and Coastal bermudagrass (fig. 5) are two of the grasses better suited to hay and pasture.

If this soil is cultivated, grassed waterways, terraces, contour tillage, crop residue management, stripcropping, and a cropping system that includes perennial grasses are needed to control erosion.

Figure 5.—Pines and pasture on Sunsweet loamy fine sand, 6 to 10 percent slopes.

CAPABILITY UNIT IIIe-4

This unit consists of sloping, well drained or moderately well drained soils on uplands. These soils have a fragipan at moderate depths.

These soils are suited to cotton, corn, soybeans, peanuts, and small grain, but are better suited to the pasture and hay plants bahiagrass, Coastal bermudagrass, and sericea lespedeza.

Erosion is a severe hazard on these soils. If the soils are cultivated, grassed waterways, terraces, contour tillage, crop residue management, stripcropping, and a cropping system that includes perennial grasses are needed to control erosion.

CAPABILITY UNIT IIIe-5

This unit consists of deep, sloping, well-drained soils on uplands. The surface layer is loose sand. The subsoil is friable sandy clay loam.

These soils are suited to tobacco, cotton, corn, soybeans, peanuts, and small grain, but are better suited to the pasture and hay plants bahiagrass, Coastal bermudagrass, and sericea lespedeza.

Erosion is a hazard on these soils. Because of the thick, sandy surface layer, they are also slightly droughty in dry periods. Large amounts of organic matter and fertilizer improve tilth, decrease the rate of leaching, and help to control erosion. Terraces, vegetated waterways, contour tillage, and crop residue management help to control erosion. Keeping close-growing crops on the soil at least 2 years out of 3 helps to maintain an adequate supply of organic matter.

CAPABILITY UNIT IIIw-1

This unit consists of deep, nearly level, moderately well drained to somewhat poorly drained soils. The surface layer is loamy sand, and it is underlain by loamy sand to sand.

If drained, these soils are suited to tobacco, cotton, corn, soybeans, small grain, bahiagrass, and Coastal bermudagrass.

Tile drains, open ditches, or a combination of both can be used to drain these soils. Open ditches, however, are difficult to maintain because of the sloughing action of the subsoil. Returning crop residue to the soil, growing crops that improve the soil at least 1 year out of 3, and including perennial grasses in cropping systems help maintain good tilth and the content of organic matter.

CAPABILITY UNIT IIIw-2

This unit consists of poorly drained and very poorly drained soils on low, flat to depressed areas. The surface layer is fine sandy loam or loam. The subsoil is firm, sandy clay to clay.

If areas of these soils are adequately drained, they are suited to corn, soybeans, cotton, small grain, tall fesuce, white clover, bahiagrass, and Coastal bermudagrass (fig. 6).

Open ditches, tile drains, or a combination of both can be used to drain these soils. In larger fields, both open ditches and tile drains are often needed for adequate drainage. The soils can be cultivated only within a narrow range of moisture content. They tend to puddle and pack if grazed when wet. If drainage is adequate, these soils can be cultivated intensively without special treatment. Returning crop residue to the soil, using soil-improving crops at least 1 year out of every 3, and using a cropping system that includes perennial grasses help to maintain good tilth and the content of organic matter.

Figure 6.—White clover pasture on drained area of Coxville fine sandy loam.

CAPABILITY UNIT IIIw-3

Wahee fine sandy loam is the only soil in this unit. This nearly level, somewhat poorly drained soil is on low stream terraces. It has a fine sandy loam surface layer and a firm clay loam to clay subsoil.

If drained, this soil is suited to corn, cotton, soybeans, small grain, tall fescue, white clover, bahiagrass, and Coastal bermudagrass.

Before this soil can be used for cultivated crops or pasture it needs to be drained. The use of open ditches is desirable. It can be cultivated only within a narrow range of moisture content. If grazed when wet, it becomes packed. Large amounts of organic matter and fertilizer are needed. Crops that improve the soil need to be grown at least 1 year out of 3 to maintain good tilth and the content of organic matter.

CAPABILITY UNIT IIIw-4

This unit consists of nearly level, poorly drained and very poorly drained soils. The surface layer is sandy loam to loam. The subsoil is sandy clay loam or silt loam.

If drained, these soils are suited to corn, soybeans, oats, tall fescue, white clover, bahiagrass, and Coastal bermudagrass.

Open ditches, tile drains, or a combination of both can be used to drain these soils. Large amounts of fertilizer and organic matter are needed.

CAPABILITY UNIT IIIw-5

Only Cahaba-Leaf complex is in this unit. These are well-drained to poorly drained, nearly level soils on stream terraces. The well-drained Cahaba soils are on narrow, low ridges. They have a surface layer of loamy fine sand and a subsoil of sandy clay loam. The poorly drained Leaf soils are in narrow depressions. They have a surface layer of fine sandy loam and a subsoil of plastic clay.

Cahaba soils are suited to tobacco, cotton, corn, soybeans, peanuts, small grain, bahiagrass, and Coastal bermudagrass. Leaf soils are better suited to tall fescue, white clover, and bahiagrass than Cahaba soils.

These areas are somewhat difficult to manage because of the wide variation of soils in a relatively small area. Fields are small. High-value crops, such as tobacco, are confined to the Cahaba or somewhat similar soils. The Leaf soils can be drained by open ditches. Large amounts of fertilizer and additions of organic matter are needed.

CAPABILITY UNIT IIIw-6

Lenoir loam is the only soil in this unit. This nearly level, somewhat poorly drained soil has a loam surface layer and a plastic clay subsoil.

If drained, the soil is suited to corn, soybeans, cotton, small grain, tall fescue, white clover, bahiagrass, and Coastal bermudagrass.

This soil needs to be drained, mainly by open ditches, before it can be used for crops or pasture. It can be cultivated only within a narrow range of moisture content. If grazed when wet, this soil becomes packed. Large amounts of organic matter and fertilizer are needed. Crops that improve the soil need to be grown at least 1 year out of 3 to maintain good tilth and the content of organic matter.

CAPABILITY UNIT IIIs-1

Troup sand, 0 to 6 percent slopes, is the only soil in this unit. This nearly level to gently sloping, deep, well-drained soil has a loose sand surface layer and subsurface layer. The combined thickness is 41 to 68 inches. The subsoil is friable sandy loam to sandy clay loam.

Many areas of this soil are planted to pine trees. Principal cultivated crops are corn, cotton, soybeans, tobacco, peanuts, watermelons, and oats. This soil is better suited to pasture and hay plants, such as bahiagrass, Coastal bermudagrass, and sericea lepedeza, than it is other crops.

The soil is droughty. Winds early in the spring cause considerable soil blowing in exposed areas that are dry and freshly plowed. This soil is very easy to till and can be cultivated soon after rains. Large amounts of organic matter and fertilizer are needed to improve tilth, decrease the rate of leaching, and help to control soil blowing. Turning under all crop residue and growing soil-improving crops 2 years out of 3 help to maintain the organic-matter content and improve tilth. Contour tillage and stripcropping help control soil blowing and water erosion.

CAPABILITY UNIT IVe-1

This unit consists of deep, well-drained, sloping to strongly sloping soils on uplands. The surface is loamy sand. The subsoil is sandy clay loam to clay.

These soils are not suited to cultivated crops, because of the narrow, irregular slopes, and the severe erosion hazard. They are better suited to pasture or trees than to other crops. Bahiagrass, Coastal bermudagrass, and sericea lepedeza are suitable plants for pasture and hay.

CAPABILITY UNIT IVe-4

This unit consists of gently sloping, well drained or moderately well drained soils that have a fragipan at moderate depths. The soils are moderately eroded.

These soils are poorly suited to row crops. Erosion is a severe hazard. The soils are better suited to trees or pasture than other crops. Plants suitable for pasture are bahiagrass, Coastal bermudagrass, and sericea lepedeza.

Pines grow on these soils, but there is risk of windthrow.

CAPABILITY UNIT IVe-5

Wagram sand, 10 to 15 percent slopes, is the only soil in this unit. This deep, strongly sloping, well-drained soil has a loose sand surface layer and subsurface layer. The combined thickness is about 26 inches. The subsoil is friable sandy clay loam.

The soil is poorly suited to row crops because it is sandy, slightly droughty, and strongly sloping. It is better suited to pasture and trees than to cultivated crops. Plants suitable for pasture and hay are bahiagrass, Coastal bermudagrass, and sericea lespedeza.

CAPABILITY UNIT IVw-2

This unit consists of nearly level, poorly drained and very poorly drained soils. The subsoil is firm or very firm clay loam to clay.

These soils are subject to flooding. If drained and protected from flooding, they are suited to corn, soybeans, and oats, but they are better suited to pasture plants. Suitable plants for pasture and hay are tall fescue, white clover, and bahiagrass. Open ditches are needed for drainage. Tile drains do not always function effectively in these soils. These soils can be cultivated only within a narrow range of moisture content. They tend to puddle and pack if grazed when wet.

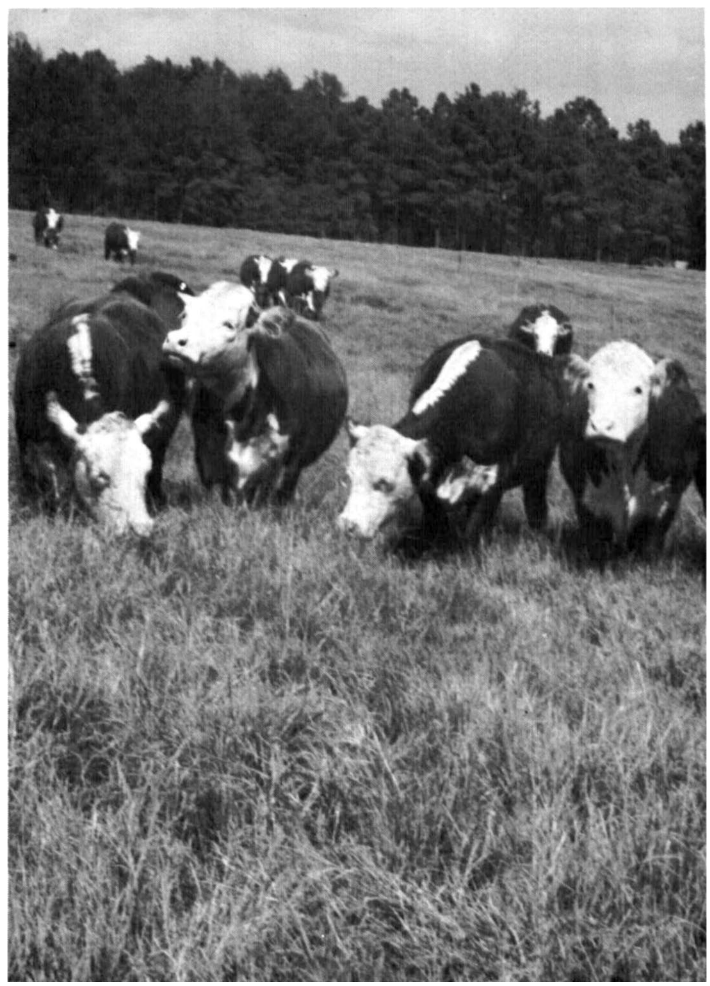

Figure 7.—Well-managed Coastal bermudagrass pasture on Lakeland sand, 0 to 6 percent slopes.

CAPABILITY UNIT IVs-1

Lakeland sand, 0 to 6 percent slopes, is the only soil in this capability unit. It is a nearly level to gently sloping, excessively drained soil. Loose sand extends to a depth of 60 inches or more.

Many areas of this soil are planted to pine trees. Principal cultivated crops are corn, peanuts, watermelons, soybeans, oats, and cotton. This soil is better suited to Coastal bermudagrass, bahiagrass, and sericea lespedeza (fig. 7).

This soil is droughty. In large open fields it is subject to soil blowing. Large amounts of fertilizer and organic matter are needed. Applying fertilizer in split applications prevents excessive leaching. Even when this soil is well managed, organic-matter content is rapidly depleted. Content of organic matter and good tilth can be maintained by planting close-growing crops 3 years out of 4 or 5, soil-improving crops, and crops that produce a large amount of residue. Bahiagrass or Coastal bermudagrass in a cropping system with row crops is excellent for maintaining organic-matter content and good tilth and as protection from soil blowing. Soil blowing can also be reduced by alternating close-growing and clean-tilled crops in strips at right angles to the prevailing wind. The use of rye is excellent in these close-growing strips.

CAPABILITY UNIT Vw-2

This unit consists of nearly level, poorly drained to very poorly drained soils on broad flats, in oval-shaped depressed areas, and in drainageways. These soils have a loamy sand surface layer underlain by sand. The sand extends to a depth of 50 inches or more.

These soils are suited to pine trees, but drainage is needed in ponded areas. They generally are unsuited to row crops. Areas that are used for permanent pasture need draining intensively. Suitable pasture plants are bahiagrass, dallisgrass, rye, and annual lespedeza.

CAPABILITY UNIT Vw-3

Lynn Haven sand is the only soil in this capability unit. This nearly level soil is poorly drained and has a hardpan that is cemented with organic matter.

Trees grow slowly on this soil and are somewhat stunted. The soil generally is not suited to cultivation. Drained areas are suited to bahiagrass and white clover.

CAPABILITY UNIT VIe-2

Vaucluse loamy sand, 10 to 15 percent slopes, is the only soil in this capability unit. This is a strongly sloping, well-drained soil that has a fragipan at a moderate depth.

Figure 8.—Pocotaligo River Swamp.

This soil is not suited to cultivated crops. If used for forage crops,careful management is needed to maintain an effective ground cover and to help control erosion. Sericea lespedeza, bahiagrass, and Coastal bermudagrass are plants better suited to pasture. The production of timber is a better use of this soil.

CAPABILITY UNIT VIs-1

This unit consists of deep, nearly level to strongly sloping, well-drained to excessively drained soils. Loose sand extends to a depth of more than 40 inches.

These soils are not suited to cultivated crops. Bahiagrass, Coastal bermudagrass, and sericea lespedeza can be grown for pasture on most of these soils. These soils are better suited to timber production. If scrub oak is controlled, pines can be grown.

CAPABILITY UNIT VIIe-2

Sunsweet loamy fine sand, 10 to 25 percent slopes is the only soil in this unit. It is strongly sloping to moderately steep and moderately deep to deep over sandy loam to sand. It is well drained and is on narrow, irregular slopes. The subsoil is firm to very firm, sandy clay to clay that contains plinthite.

This soil is not suited to cultivated crops. It is better suited to trees.

CAPABILITY UNIT VIIw-1

This unit consists of Swamp and Ponzer soils. Swamp is a land type on the flood plains of streams. These areas are covered by 1 to 3 feet or more of water most of the time (fig. 8). The soils are too nearly inaccessible for orderly examination and classification.

The very poorly drained Ponzer soils are in large "Carolina Bays" in Sumter County. They have 16 to 30 inches of decomposed organic material over loamy mineral material.

Extensive reclamation work, using dikes and drainage ditches, is needed to use soils of this unit for cultivation or pasture. These areas are well suited to woodland and as habitat for wildlife.

CAPABILITY UNIT VIIw-2

This unit consists of alluvial soils on the flood plains of rivers and streams. The soils are nearly level and predominantly poorly drained and very poorly drained; some are somewhat poorly drained and well drained. All are frequently flooded. The surface layer is sandy loam to silty clay loam. The subsoil ranges from stratified sandy material to clay.

The soils are not suited to cultivated crops, because of frequent flooding. Some of the higher areas can be used for limited pasture. Bahiagrass, tall fescue, and white clover are suitable plants. These soils are better suited to timber production than cultivated crops. The wetter soils are well suited to hardwoods. The slightly higher areas are well suited to pines.

CAPABILITY UNIT VIIs-1

Kershaw sand, 0 to 15 percent slopes, is the only soil in this unit. It is nearly level to strongly sloping, deep, loose, and excessively drained. The surface layer and underlying material are sand.

This soil is well suited to woodland but not to cultivated crops. Because the soil is extremely droughty, it is not well suited to pasture plants. Many areas are planted to pines. A few small areas have been cleared and planted to watermelons or Coastal bermudagrass.

CAPABILITY UNIT VIIs-2

Only the land type Mine pits and dumps is in this unit. It consists of open pits from which gravel, sand, or other soil material has been removed, and of areas where the soil material removed in mining operations has been dumped.

A few areas have been reclaimed by spreading the spoil and planting pine trees or Coastal bermudagrass for pasture and hay. Some of the deeper pits contain water and can be stocked with fish, or the water can be used for irrigation.

Soil Suitability for Crops

In table 2 the soils of the survey area are rated according to their suitability for certain common crops. A rating of 1 indicates that the soil is well suited for the stated crops. Hazards are few, intensive management is not needed, and favorable yields are likely. A rating of 2 indicates that the soil is fairly well suited. Use of the soil is limited by excessive moisture, too little moisture, low fertility, or some other limitation. A rating of 3 indicates that the soil is not well suited. Favorable yields are not likely unless intensive management is practiced. A rating of 4 indicates that the soil is poorly suited to the stated crop, that hazards and limitations are severe, and that it is impractical to grow the crop on the soil.

TABLE 2.—*Suitability of soils in capability classes I through IV for stated crops*

[Soils rated 1 are well suited; 2, fairly well suited; 3, not well suited; and 4, poorly suited]

Soil	Tobacco	Cotton	Corn	Soybeans	Peanuts	Oats	Wheat	Pasture: Winter: Tall fescue and white clover	Pasture: Summer: Bahiagrass	Pasture: Summer: Coastal bermuda-grass
Barth loamy sand	3	3	3	3	3	3	3	4	2	3
Brogdon sand	2	2	2	2	2	2	2	4	2	2
Cahaba loamy fine sand, 0 to 3 percent slopes	2	2	1	2	2	1	2	4	1	1
Cahaba-Leaf complex:										
Cahaba	2	2	1	2	2	1	2	4	1	1
Leaf	4	4	3	3	4	3	4	2	2	4
Cape Fear loam	4	4	3	3	4	3	4	2	2	4
Chipley loamy sand, dark surface	2	2	2	2	4	2	3	3	2	1
Congaree loam	4	4	1	1	4	1	2	1	1	1
Coxville fine sandy loam	4	3	2	2	4	2	3	2	1	3
Duplin fine sandy loam	1	2	1	1	2	1	2	3	1	1
Duplin and Exum soils, 0 to 2 percent slopes	2	2	1	2	3	1	2	2	1	1
Duplin and Exum soils, 2 to 6 percent slopes	2	2	2	2	3	2	3	3	2	2
Exum sandy loam	1	2	1	1	2	1	2	3	1	1
Faceville loamy sand, 0 to 2 percent slopes	2	1	1	1	1	1	1	3	1	1
Faceville loamy sand, 2 to 6 percent slopes	2	1	1	1	1	1	1	3	1	1
Faceville loamy sand, 6 to 15 percent slopes	4	4	4	4	4	4	4	4	2	2
Fuquay sand, 0 to 4 percent slopes	2	2	2	2	2	2	2	4	2	2
Goldsboro loamy sand	1	2	1	1	2	1	2	2	1	1
Goldsboro loamy sand, moderately deep variant	1	2	1	1	2	1	2	2	1	1
Greenville loamy sand, 0 to 2 percent slopes	2	1	1	1	1	1	1	3	1	1
Greenville loamy sand, 2 to 6 percent slopes	2	1	1	1	1	1	1	3	1	1
Greenville loamy sand, 6 to 10 percent slopes	3	2	2	2	2	2	2	3	1	1
Greenville sandy loam, 0 to 2 percent slopes	2	1	1	1	1	1	1	3	1	1
Greenville sandy loam, 2 to 6 percent slopes	2	1	1	1	1	1	1	3	1	1
Hyde loam	4	4	2	2	4	2	4	2	1	2
Irvington loamy sand, 0 to 2 percent slopes	3	2	2	2	2	2	2	4	2	2

TABLE 2.—*Suitability of soils in capability classes I through IV for stated crops*—Continued

Soil	Tobacco	Cotton	Corn	Soybeans	Peanuts	Oats	Wheat	Pasture		
								Winter	Summer	
								Tall fescue and white clover	Bahiagrass	Coastal bermuda-grass
Irvington loamy sand, 2 to 6 percent slopes	3	2	2	2	2	2	2	4	2	2
Irvington loamy sand, 6 to 10 percent slopes	4	3	3	3	3	3	3	4	2	2
Irvington loamy sand, 6 to 10 percent slopes, eroded	4	4	4	4	4	4	4	4	3	3
Johns fine sandy loam	1	2	1	1	2	1	3	3	1	1
Kalmia loamy sand	2	2	1	2	2	1	2	4	1	1
Kenansville sand, 0 to 4 percent slopes	3	2	3	2	2	2	3	4	2	2
Lakeland sand, 0 to 6 percent slopes	4	3	3	3	3	3	4	4	3	3
Leaf fine sandy loam	4	4	3	3	4	3	4	2	1	4
Lenoir loam	4	3	2	2	4	2	3	2	1	3
Lucy sand, 0 to 6 percent slopes	2	2	2	2	2	2	2	4	2	2
Lucy sand, 6 to 10 percent slopes	3	3	3	3	3	3	3	4	2	2
Lynchburg sandy loam	1	2	1	1	4	2	3	2	1	2
McColl fine sandy loam	4	3	2	2	4	2	3	2	1	3
Norfolk loamy sand, 0 to 2 percent slopes	1	1	1	1	1	1	2	3	1	1
Norfolk loamy sand, 2 to 6 percent slopes	1	1	1	1	1	1	2	3	1	1
Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes	1	1	1	1	1	1	2	3	1	1
Olanta loamy sand	1	2	1	2	2	1	3	3	1	1
Orangeburg loamy sand, 0 to 2 percent slopes	1	1	1	1	1	1	1	4	1	1
Orangeburg loamy sand, 2 to 6 percent slopes	1	1	1	1	1	1	1	4	1	1
Orangeburg loamy sand, 6 to 10 percent slopes	3	2	2	2	2	2	2	4	1	1
Orangeburg loamy sand, 10 to 15 percent slopes	4	4	4	4	4	4	4	4	2	2
Pantego loam	4	4	2	2	4	2	4	2	1	4
Pocalla sand, 0 to 4 percent slopes	2	2	2	2	2	2	2	4	2	2
Rains sandy loam	3	3	2	2	4	2	4	2	1	3
Rains sandy loam, moderately deep variant	4	4	2	2	4	2	4	3	1	2
Red Bay sandy loam, 0 to 2 percent slopes	2	1	1	1	1	1	1	4	1	1

TABLE 2.—*Suitability of soils in capability classes I through IV for stated crops*—Continued

Soil	Tobacco	Cotton	Corn	Soybeans	Peanuts	Oats	Wheat	Pasture: Winter: Tall fescue and white clover	Pasture: Summer: Bahiagrass	Pasture: Summer: Coastal bermuda-grass
Red Bay sandy loam, 2 to 6 percent slopes	2	1	1	1	1	1	1	4	1	1
Rembert loam	4	3	2	2	4	2	3	2	1	2
Sunsweet loamy fine sand, 6 to 10 percent slopes	4	3	3	3	4	3	3	4	3	3
Troup sand, 0 to 6 percent slopes	3	3	3	3	3	3	4	4	3	2
Varina loamy fine sand, 0 to 2 percent slopes	1	1	1	1	1	1	1	3	1	1
Varina loamy fine sand, 2 to 6 percent slopes	1	1	1	1	1	1	1	3	1	1
Vaucluse loamy sand, 2 to 6 percent slopes	3	3	3	3	3	3	3	4	3	3
Vaucluse loamy sand, 6 to 10 percent slopes	4	3	3	3	3	3	3	4	3	3
Vaucluse sandy loam, 3 to 8 percent slopes, eroded	4	4	4	4	4	4	4	4	3	3
Wagram sand, 0 to 6 percent slopes	2	2	2	2	2	2	2	4	2	2
Wagram sand, 6 to 10 percent slopes	3	3	3	3	3	3	3	4	2	2
Wagram sand, 10 to 15 percent slopes	4	4	4	4	4	4	4	4	2	2
Wahee fine sandy loam	4	3	2	2	4	2	2	2	1	3

Estimated yields

Table 3 shows estimated average acre yields of the principal crops grown on the soils in the survey area under two levels of management. The yields in columns A are average yields obtained under the level of management prevalent in the county. Those in columns B are yields to be expected under improved management.

The yields in columns A are based largely on observations by members of the soil survey party, on information obtained by interviewing farmers and other agricultural workers who have had experience with the soils and crops of the area, and on comparison with crop yields obtained from similar soils in other counties in South Carolina.

The practices used in improved management vary according to the soils. The practices needed for obtaining the yields in columns B are (1) proper choice and rotation of crops; (2) correct use of commercial fertilizer, lime, and manure; (3) correct methods of tillage; (4) return of organic matter to the soils; (5) adequate control of water; (6) maintenance or improvement of workability of the soil; and (7) conservation of soil material, plant nutrients, and soil moisture.

The response of a soil to management can be measured, in part, by comparing yields in columns A of table 3 with those in columns B. Most soils in the Area produce higher yields when management is improved.

Woodland[4]

Approximately a half million acres in Florence and Sumter Counties are wooded.

Forest-type groups are: longleaf-slash pine (7.8%), loblolly-shortleaf pine (29.5%), oak-pine (16.8%), oak-hickory (14.9%), oak-gum-cypress (29.0%), and elm-ash-cottonwood (2.0%).

In 1967 sawtimber growth exceeded cut by 30.8 million board feet; growing stock growth exceeded cut by 9.4 million cubic feet (*12*). Markets for wood crops are readily available.

[4] GEORGE E. SMITH, JR., woodland conservationist, Soil Conservation Service assisted in the preparation of this section.

Woodland suitability groups

Management of soils can be planned more effectively if soils are grouped according to characteristics that affect the establishment, growth, management, and harvesting of wood crops.

Table 4 summarizes evaluations for individual soils based on information gathered by teams of foresters and soil scientists. An explanation of evaluations is contained in the paragraphs that follow.

A woodland suitability group is made up of kinds of soil that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. Detailed information concerning the ordination system and suitability groups has been published (*10*).

Potential productivity is indicated as the average site indexes for the most important tree species listed. The standard deviation is shown as a plus or minus figure ($\pm$) for each species where five or more plots were measured on the soils listed. Site index is the average height of dominant trees at age 50, except for sycamore at age 35 and cottonwood at age 30.

The potential *erosion hazard* of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas is evaluated. A rating of *slight* indicates that problems of erosion control are unimportant. A rating of *moderate* indicates some attention must be given to help control erosion. A rating of *severe* indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth, and erodibility and soil loss tolerance.

The evaluations of *equipment limitations* reflect restrictions on the use of equipment for managing or harvesting the tree crop. A rating of *slight* indicates equipment use is seldom limited as to type or time of year. A rating of *moderate* indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of *severe* indicates the need for specialized equipment because of one or more of the factors listed above.

The ratings for expected *seedling mortality* are for the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of *slight* indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of *moderate* indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of *severe* indicates that unsatisfactory survival is likely on more than 50 percent of the area.

Several tree species suitable for planting on the soil are also listed in table 4. The list includes species that normally do not occur in native stands on the designated soil or in this physiographic area.

Following are brief descriptions of the 18 woodland suitability groups in Florence and Sumter Counties.

WOODLAND SUITABILITY GROUP 1o7

In this group are deep, well-drained, nearly level soils on flood plains. These soils are very highly productive and have no serious limitations. The are suited to broadleaf and needleleaf trees.

Important species of trees and their site class are loblolly pine (100), slash pine (100), sweetgum (90), water oak (80), yellow-poplar (class not determined), red oak (class not determined), and white oak (class not determined). Species suitable for planting are slash pine, loblolly pine, yellow-poplar, sycamore, cottonwood, sweetgum, and cherrybark oak.

WOODLAND SUITABILITY GROUP 1w8

In this group are deep, nearly level, somewhat poorly drained soils on flood plains. Potential productivity is very high. Equipment restrictions are moderate, and seedling morality is slight to moderate. The soils are suited to broadleaf and needleleaf trees.

Important species of trees and their site class are loblolly pine (100), slash pine (100), sweetgum (100), yellow-poplar (110), green ash (class not determined), red oaks (class not determined), and white oaks (class not determined). Species suitable for planting are slash pine, loblolly pine, yellow-poplar, sycamore, sweetgum, and cherrybark oak.

WOODLAND SUITABILITY GROUP 1w9

In this group are deep, nearly level, poorly drained soils that are potentially very highly productive. Seedling mortality and equipment limitations are severe in areas that do not have adequate surface drainage. The soils are suited to broadleaf and needleleaf trees.

Important species of trees and their site class are slash pine (100), loblolly pine (100), water oaks (90-100), tupelos (class not determined), and pond pine (80). Species suitable for planting are loblolly pine, slash pine, sweetgum, sycamore, water tupelo, and Shumard oak.

WOODLAND SUITABILITY GROUP 2o1

In this group are deep to moderately deep, well-drained, nearly level to strongly sloping soils that have high potential productivity. These soils have no serious limitations. They are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), and longleaf pine (70). Species suitable for planting are slash pine and loblolly pine.

WOODLAND SUITABILITY GROUP 2o7

In this group are moderately deep, nearly level to sloping, well drained or moderately well drained soils that have high potential productivity. These soils have no serious limitations. They are suited to needleleaf and broadleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), yellow-poplar (100), red oaks (class not determined), and white oaks (class not determined). Species suitable for planting are slash pine, loblolly pine, yellow-poplar, and black walnut.

WOODLAND SUITABILITY GROUP 2w2

In this group are moderately deep nearly level, moderately well drained soils that have high productivity. Equipment restrictions are moderate, and seedling mortality is slight to moderate. With adequate surface drainage, the soils are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), and longleaf pine (70). Species suitable for planting are loblolly pine and slash pine.

TABLE 3.—*Estimated average acre yields of*

[Yields in columns A are those obtained under management prevalent in the survey area; yields in columns B are
soil is not

Soil	Tobacco		Cotton (lint)		Corn		Soybeans	
	A	B	A	B	A	B	A	B
	Lbs	Lbs.	Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.
Barth loamy sand	1,200	1,500	300	550	30	55	15	25
Brogdon sand	1,600	2,000	350	700	35	70	15	35
Cahaba loamy fine sand, 0 to 3 percent slopes	1,800	2,400	425	800	45	90	25	35
Cahaba-Leaf complex:								
Cahaba	1,800	2,400	425	800	45	90	25	35
Leaf	-----	-----	---	---	25	50	10	20
Cape Fear loam	-----	-----	---	---	--	--	--	--
Chastain soils, frequently flooded	-----	-----	---	---	--	--	--	--
Chastain-Chewacla association, frequently flooded	-----	-----	---	---	--	--	--	--
Chastain-Chewacla-Congaree association, frequently flooded	-----	-----	---	---	--	--	--	--
Chewacla soils, frequently flooded	-----	-----	---	---	--	--	--	--
Chipley loamy sand, dark surface	1,800	2,400	300	600	35	65	20	35
Congaree loam	-----	-----	---	---	60	100	25	45
Coxville fine sandy loam	-----	-----	250	450	40	75	15	35
Duplin fine sandy loam	2,000	2,800	400	825	50	100	25	45
Duplin and Exum soils, 0 to 2 percent slopes	2,000	2,800	400	800	50	100	25	45
Duplin and Exum soils, 2 to 6 percent slopes	1,800	2,400	400	800	35	75	20	35
Exum sandy loam	2,000	2,800	400	800	50	100	25	45
Faceville loamy sand, 0 to 2 percent slopes	1,800	2,400	450	900	45	80	25	40
Faceville loamy sand, 2 to 6 percent slopes	1,800	2,400	425	800	40	80	20	35
Faceville loamy sand, 6 to 15 percent slopes	-----	-----	---	---	--	--	--	--
Fuquay sand, 0 to 4 percent slopes	1,600	2,000	300	600	35	70	15	30
Goldsboro loamy sand	2,000	2,800	400	800	50	100	25	45
Goldsboro loamy sand, moderately deep variant	2,000	2,800	350	700	50	90	25	45
Greenville loamy sand, 0 to 2 percent slopes	1,800	2,400	450	900	45	80	25	40
Greenville loamy sand, 2 to 6 percent slopes	1,800	2,400	425	800	40	80	20	35
Greenville loamy sand, 6 to 10 percent slopes	-----	-----	350	625	30	55	15	25
Greenville sandy loam, 0 to 2 percent slopes	-----	-----	450	900	45	80	25	40
Greenville sandy loam, 2 to 6 percent slopes	-----	-----	425	800	40	80	20	35
Hyde loam	-----	-----	---	---	40	75	15	35
Irvington loamy sand, 0 to 2 percent slopes	-----	-----	375	650	40	75	20	35
Irvington loamy sand, 2 to 6 percent slopes	-----	-----	350	600	35	70	20	35
Irvington loamy sand, 6 to 10 percent slopes	-----	-----	300	400	25	45	15	25

principal crops under two levels of management

those expected under improved management. Absence of data indicates crop is not commonly grown or suited to it]

Peanuts		Oats		Wheat		Pasture					
						Fescue and white clover		Bahiagrass		Coastal bermudagrass	
A	B	A	B	A	B	A	B	A	B	A	B
Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/
-----	-----	30	50	--	--	-----	-----	5.0	7.0	4.5	6.0
1,500	2,400	40	70	20	35	-----	-----	5.3	8.0	5.5	9.0
1,500	3,000	45	80	25	45	-----	-----	6.0	8.5	6.0	10.5
1,500	3,000	45	80	25	45	-----	-----	6.0	8.5	6.0	10.5
-----	-----	30	55	--	--	5.0	7.0	6.6	10.0	---	-----
-----	-----	--	--	--	--	-----	-----	---	-----	---	-----
-----	-----	--	--	--	--	-----	-----	---	-----	---	-----
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-----	-----	--	--	--	--	-----	-----	---	-----	---	-----
-----	-----	--	--	--	--	-----	-----	---	-----	---	-----
-----	-----	40	65	--	--	2.5	5.0	6.0	8.0	6.0	10.0
-----	-----	55	85	--	--	-----	-----	---	-----	---	-----
-----	-----	40	70	15	30	6.0	8.0	6.6	10.0	---	-----
-----	-----	45	85	20	40	-----	-----	6.0	9.0	6.0	10.0
-----	-----	45	85	20	40	-----	-----	6.0	9.0	6.0	10.0
-----	-----	35	65	20	35	-----	-----	5.3	7.0	5.5	9.0
1,500	2,400	45	85	20	40	-----	-----	6.0	9.0	6.0	10.5
1,500	3,000	40	75	25	45	-----	-----	6.0	8.5	6.0	10.0
1,200	2,500	40	75	20	40	-----	-----	6.0	8.5	6.0	10.0
-----	-----	--	--	--	--	-----	-----	5.3	8.0	5.5	9.0
1,500	2,400	40	70	20	35	-----	-----	5.3	8.0	5.5	9.0
1,500	2,400	45	85	20	40	-----	-----	6.0	9.0	6.0	10.5
-----	-----	40	75	--	--	5.0	6.5	6.0	9.0	---	---
1,500	3,000	40	75	25	45	-----	-----	6.0	8.5	6.0	10.0
1,200	2,500	40	75	20	40	-----	-----	6.0	8.5	6.0	10.0
-----	-----	40	60	20	35	-----	-----	5.3	8.5	6.0	10.0
1,500	3,000	40	75	25	45	-----	-----	6.0	8.5	6.0	10.0
1,200	2,500	40	75	20	40	-----	-----	6.0	8.5	6.0	10.0
-----	-----	40	70	--	--	6.0	8.0	6.6	10.0	---	---
-----	-----	35	65	20	35	-----	-----	5.0	8.0	5.5	9.5
-----	-----	30	55	15	30	-----	-----	5.3	8.0	5.5	8.5
-----	-----	25	45	15	25	-----	-----	5.0	7.5	5.0	8.0

TABLE 3.—*Estimated average acre yields of*

	Tobacco		Cotton (lint)		Corn		Soybeans	
	A	B	A	B	A	B	A	B
	Lbs.	Lbs.	Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.
Irvington loamy sand, 6 to 10 percent slopes, eroded	----	----	----	----	---	---	---	---
Johns fine sandy loam	2,000	2,800	400	800	50	100	25	45
Kalmia loamy sand	1,800	2,400	425	800	45	90	25	35
Kenansville sand, 0 to 4 percent slopes	1,500	1,900	300	550	30	65	15	30
Kershaw sand, 0 to 15 percent slopes	-----	----	----	----	---	---	---	---
Lakeland sand, 0 to 6 percent slopes	-----	----	200	400	20	50	10	20
Lakeland sand, 6 to 15 percent slopes	-----	----	----	----	---	---	---	---
Leaf fine sandy loam	-----	----	----	----	25	50	10	20
Lenoir loam	-----	----	250	475	40	75	15	35
Lucy sand, 0 to 6 percent slopes	1,600	2,000	300	600	35	70	15	30
Lucy sand, 6 to 10 percent slopes	-----	----	300	500	30	55	10	20
Lynchburg sandy loam	2,000	2,800	350	675	50	90	25	45
Lynn Haven sand	-----	----	---	---	--	--	--	--
Made land	-----	----	---	---	--	--	--	--
McColl fine sandy loam	-----	----	250	450	40	75	15	35
Mine pits and dumps	-----	----	---	---	--	--	--	--
Norfolk loamy sand, 0 to 2 percent slopes	1,800	2,500	425	850	45	90	25	35
Norfolk loamy sand, 2 to 6 percent slopes	1,800	2,500	400	800	40	85	20	35
Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes	1,800	2,500	425	825	45	90	25	35
Olanta loamy sand	2,000	2,800	400	800	50	100	25	45
Orangeburg loamy sand, 0 to 2 percent slopes	1,800	2,500	425	850	45	90	25	35
Orangeburg loamy sand, 2 to 6 percent slopes	1,800	2,500	400	800	40	85	20	35
Orangeburg loamy sand, 6 to 10 percent slopes	-----	----	350	650	35	70	15	30
Orangeburg loamy sand, 10 to 15 percent slopes	-----	----	---	---	--	--	--	--
Osier loamy sand	-----	----	---	---	--	--	--	--
Pantego loam	-----	----	---	---	40	75	15	35
Pocalla sand, 0 to 4 percent slopes	1,600	2,000	300	600	35	70	15	30
Ponzer soils	-----	----	---	---	--	--	--	--
Rains sandy loam	-----	----	---	---	40	75	15	35
Rains sandy loam, moderately deep variant	-----	----	---	---	40	75	15	35
Red Bay sandy loam, 0 to 2 percent slopes	1,800	2,400	425	825	45	85	25	35
Red Bay sandy loam, 2 to 6 percent slopes	1,800	2,400	400	750	40	80	20	35
Rembert loam	-----	----	250	450	40	75	15	35
Rimini sand	-----	----	---	---	--	--	--	--

principal crops under two levels of management—Continued

Peanuts		Oats		Wheat		Pasture					
						Fescue and white clover		Bahiagrass		Coastal bermudagrass	
A	B	A	B	A	B	A	B	A	B	A	B
Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.	A.U.M. 1/	A.U.M. 1/	A.U.M. 1/	A.U.M. 1/	A.U.M. 1/	A.U.M. 1/
-----	-----	--	--	--	--	---	---	4.5	7.0	4.5	7.0
-----	-----	45	85	20	40	---	---	6.0	9.0	6.0	10.5
1,500	3,000	45	80	25	45	---	---	6.0	8.5	6.0	10.5
-----	-----	35	65	20	30	---	---	5.3	7.5	5.5	9.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	20	40	--	--	---	---	3.3	5.0	3.5	5.5
-----	-----	--	--	--	--	---	---	3.3	5.0	3.5	5.5
-----	-----	30	55	--	--	5.0	7.0	6.6	10.0	---	---
-----	-----	35	60	15	30	5.0	7.0	6.6	10.0	---	---
1,500	2,400	40	70	20	35	---	---	5.3	8.0	5.5	9.0
-----	-----	25	45	15	25	---	---	5.0	7.0	5.0	8.0
-----	-----	40	70	--	--	5.0	6.5	6.6	8.5	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	35	60	15	30	6.0	7.0	6.6	10.0	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
1,500	3,000	45	80	25	45	---	---	6.0	8.5	6.0	10.5
1,200	2,800	40	75	20	40	---	---	6.0	8.5	6.0	10.5
1,500	3,000	45	80	25	45	---	---	6.0	8.5	6.0	10.5
1,500	2,400	45	85	20	40	---	---	6.0	9.0	6.0	10.5
1,500	3,000	45	80	25	45	---	---	6.0	8.5	6.0	10.5
1,200	2,800	40	75	20	40	---	---	6.0	8.5	6.0	10.5
1,200	2,400	40	65	20	35	---	---	5.3	8.5	5.5	10.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	40	65	--	--	6.0	8.0	6.6	10.0	---	---
1,500	2,400	40	70	20	35	---	---	5.3	8.0	5.5	9.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	40	70	--	--	6.0	8.0	6.6	10.0	---	---
-----	-----	40	70	--	--	6.0	8.0	6.6	10.0	---	---
1,500	2,500	45	80	25	45	---	---	6.0	8.5	6.0	10.5
1,200	2,400	40	75	20	40	---	---	6.0	8.5	6.0	10.5
-----	-----	40	70	15	30	6.0	8.0	6.6	10.0	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---

TABLE 3.—*Estimated average acre yields of*

	Tobacco		Cotton		Corn		Soybeans	
	A	B	A	B	A	B	A	B
	Lbs.	Lbs.	Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.
Rutlege loamy sand	----	----	---	---	--	--	--	--
Sunsweet loamy fine sand, 6 to 10 percent slopes	----	----	---	---	--	--	--	--
Sunsweet loamy fine sand, 10 to 25 percent slopes	----	----	---	---	--	--	--	--
Swamp	----	----	---	---	--	--	--	--
Troup sand, 0 to 6 percent slopes	1,100	1,500	250	500	25	55	10	20
Troup sand, 6 to 15 percent slopes	-----	-----	---	---	--	--	--	--
Varina loamy fine sand, 0 to 2 percent slopes	1,800	2,500	450	900	45	80	25	40
Varina loamy fine sand, 2 to 6 percent slopes	1,800	2,500	425	800	45	80	20	35
Vaucluse loamy sand, 2 to 6 percent slopes	-----	----	300	450	30	50	10	20
Vaucluse loamy sand, 6 to 10 percent slopes	-----	----	250	400	25	45	10	20
Vaucluse loamy sand, 10 to 15 percent slopes	-----	----	---	---	--	--	--	--
Vaucluse sandy loam, 3 to 8 percent slopes, eroded	-----	----	---	---	--	--	--	--
Wagram sand, 0 to 6 percent slopes	1,600	2,000	300	600	35	70	15	30
Wagram sand, 6 to 10 percent slopes	-----	----	300	500	30	55	10	20
Wagram sand, 10 to 15 percent slopes	-----	----	---	---	--	--	--	--
Wahee fine sandy loam	-----	----	300	500	40	75	15	35
Wehadkee-Chastain association, frequently flooded	-----	----	---	---	--	--	--	--
Wehadkee and Johnston soils, frequently flooded	-----	----	---	---	--	--	--	--

1/ A.U.M. is an abbreviation for animal-unit-month. It is a measure of forage or feed requirement to maintain one animal unit for a period of 30 days.

principal crops under two levels of management—Continued

Peanuts		Oats		Wheat		Pasture					
						Fescue and white clover		Bahiagrass		Coastal bermudagrass	
A	B	A	B	A	B	A	B	A	B	A	B
Lbs.	Lbs.	Bu.	Bu.	Bu.	Bu.	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/	A.U.M.1/
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	--	--	--	--	---	---	3.5	5.0	3.5	5.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
1,000	2,000	30	55	--	--	---	---	4.5	6.5	5.0	7.5
-----	-----	--	--	--	--	---	---	4.5	6.0	5.0	6.5
1,500	3,000	40	75	25	45	---	---	6.0	8.5	6.0	10.0
1,200	2,500	40	70	20	40	---	---	6.0	8.5	6.0	10.0
-----	-----	25	45	15	25	---	---	5.0	6.5	5.0	6.5
-----	-----	25	45	15	25	---	---	4.5	6.0	4.5	6.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	--	--	--	--	---	---	4.5	6.0	4.5	6.0
1,500	2,400	40	70	20	35	---	---	5.3	8.0	5.5	9.0
-----	-----	25	45	15	25	---	---	5.0	7.0	5.0	8.0
-----	-----	--	--	--	--	---	---	---	---	---	---
-----	-----	40	70	15	30	5.0	9.0	6.6	9.0	---	---
-----	-----	--	--	--	--	---	---	---	---	---	---
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TABLE 4.—*Soil ratings for woodland use*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or more kinds of soil. The soils in such mapping units may have different properties and limitations, and for this reason it is necessary to follow carefully the instructions for referring to other series that appear in the first column of this table. Made land (Ma), Mine pits and dumps (Mp), and Swamp (Sw) are variable, and ratings for them were not made]

Soil series and map symbols	Woodland suitability group	Potential productivity		Management concerns			Species suitable for planting
		Tree species	Average site index and standard deviation	Erosion hazard	Equipment limitation	Seedling mortality	
Barth: Ba	3w2	Slash pine	85	Slight	Moderate	Moderate	Slash pine, loblolly pine.
		Longleaf pine	76				
		Loblolly pine	85				
Brogdon: Br	2o1	Slash pine	86	Slight	Slight	Slight	Slash pine, loblolly pine, longleaf pine.
		Longleaf pine	1/ 70				
		Loblolly pine	1/ 80				
*Cahaba: CaA, Cb. For ratings of Leaf soils in unit Cb, see Leaf series.	2o7	Loblolly pine	91±4	Slight	Slight	Slight	Slash pine, loblolly pine, yellow-poplar.
		Sweetgum	90				
		Longleaf pine	72±5				
Cape Fear: Ce	2w9	Tupelo	---	Slight	Severe	Severe	Loblolly pine, yellow-poplar.
		Slash pine	1/ 90				
		Loblolly pine	90				
		Sweetgum	90				
*Chastain: Cf, Cg, Ch. For ratings of the Chewacla soils in mapping units Cg and Ch, and the Congaree soils in mapping unit Ch, see the Chewacla and Congaree series, respectively.	2w9	Sweetgum	94±11	Slight	Severe	Severe	Yellow-poplar, sweetgum, loblolly pine, cherrybark oak.
		Water oak	89±13				
		Loblolly pine	90±3				
Chewacla: Cm	1w8	Yellow-poplar	104±8	Slight	Moderate	Moderate	Yellow-poplar, sweetgum, loblolly pine, slash pine, sycamore, cherrybark oak.
		Sweetgum	97±13				
		Loblolly pine	96±6				
Chipley: Cn	3w2	Longleaf pine	74±4	Slight	Moderate	Moderate	Slash pine, loblolly pine,
		Loblolly pine	89±8				
		Slash pine	88±6				
Congaree: Co	1o7	Black cherry	90	Slight	Slight	Slight	Loblolly pine, slash pine, yellow-poplar, sycamore, cherrybark oak, cottonwood, sweetgum.
		Black walnut	100				
		Cherrybark oak	107				
		Cottonwood	107				
		Green ash	95				
		Loblolly pine	90				
		Sugarberry	80				
		Swamp white oak	85				
		Sweetgum	100±9				
		Sycamore	89				
		Water oak	88				
		White oak	85				
		Willow oak	95				
		Yellow-poplar	107±11				
Coxville: Cv	2w9	Loblolly pine	90±4	Slight	Severe	Severe	Slash pine, loblolly pine, sweetgum.
		Longleaf pine	71±6				
		Sweetgum	90				

TABLE 4.—Soil ratings for woodland use—Continued

Soil series and map symbols	Woodland suitability group	Potential productivity: Tree species	Potential productivity: Average site index and standard deviation	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Species suitable for planting
*Duplin: Dp, DuA, DuB. For ratings of Exum soils in mapping units DuA and DuB, see Exum series.	2w8	Loblolly pine	90	Slight	Moderate	Moderate	Loblolly pine, slash pine, sweetgum.
		Slash pine	90				
		Yellow-poplar	100				
Exum: Ex	2w8	Loblolly pine	90	Slight	Moderate	Moderate	Loblolly pine, slash pine, sweetgum.
		Sweetgum	90				
		Yellow-poplar	100				
Faceville: FaA, FaB, FaD.	3o1	Loblolly pine	82	Slight	Slight	Slight	Loblolly pine, slash pine.
		Slash pine	1/ 80				
		Longleaf pine	65				
Fuquay: FuB	3s2	Loblolly pine	83±5	Slight	Slight	Moderate	Slash pine.
		Slash pine	1/ 83				
		Longleaf pine	67±4				
Goldsboro: Go	2w8	Loblolly pine	90±7	Slight	Moderate	Slight	Loblolly pine, slash pine, sweetgum, sycamore.
		Slash pine	93±5				
		Longleaf pine	77±6				
		Sweetgum	1/ 90				
Goldsboro, moderately deep variant: Gp.	2w8	Loblolly pine	90±7	Slight	Moderate	Slight	Loblolly pine, slash pine, sweetgum, sycamore.
		Slash pine	93±5				
		Longleaf pine	77±6				
		Sweetgum	1/ 90				
Greenville: GrA, GrB, GrC, GsA, GsB.	3o1	Loblolly pine	83±5	Slight	Slight	Slight	Loblolly pine, slash pine.
		Slash pine	1/ 83				
		Longleaf pine	70				
Hyde: Hy	1w9	Swamp tupelo	1/ 70	Slight	Severe	Severe	Cypress, tupelo, pond pine, loblolly pine, slash pine.
		Loblolly pine	96				
		Slash pine	96				
		Sweetgum	97				
		Water oak	95				
Irvington: IrA, IrB, IrC, IrC2.	2o7	Slash pine	86	Slight	Slight	Slight	Loblolly pine, slash pine, yellow-poplar.
		Loblolly pine	86				
		Longleaf pine	68				
		Yellow-poplar	90				
Johns: Jo	2w2	Loblolly pine	86	Slight	Moderate	Moderate	Loblolly pine, slash pine.
		Slash pine	86				
		Sweetgum	90				
Johnston. Mapped only in undifferentiated group with Wehadkee soils.	1w9	Water oak	103	Slight	Severe	Severe	Loblolly pine, slash pine, yellow-poplar, water tupelo.
		Sweetgum	111				
		Loblolly pine	97				
Kalmia: Ka	2o7	Loblolly pine	88±5	Slight	Slight	Slight	Loblolly pine, slash pine, cherrybark oak.
		Slash pine	88				
		Sweetgum	85				
		Yellow-poplar	96				
Kenansville: KeB	3s2	Loblolly pine	80	Slight	Moderate	Moderate	Loblolly pine, slash pine.
		Longleaf pine	65				
		Slash pine	1/ 80				
Kershaw: KhD	5s3	Longleaf pine	55	Slight	Moderate	Severe	Longleaf pine, slash pine.
		Slash pine	65				

TABLE 4.—*Soil ratings for woodland use*—Continued

Soil series and map symbols	Woodland suitability group	Potential productivity		Management concern			Species suitable for planting
		Tree species	Average site index and standard deviation	Erosion hazard	Equipment limitation	Seedling mortality	
Lakeland: LaB, LaD	4s2	Longleaf pine Loblolly pine Slash pine	61+4 75±5 1/ 75	Slight	Moderate	Moderate	Longleaf pine, slash pine.
Leaf: Ls	2w9	Loblolly pine Slash pine Sweetgum	91+5 90 85	Slight	Severe	Severe	Loblolly pine, slash pine, sweetgum.
Lenoir: Lt	2w8	Loblolly pine Slash pine Sweetgum	86+5 85 88	Slight	Moderate	Moderate	Loblolly pine, slash pine, sycamore, sweetgum.
Lucy: LuB, LuC	3s2	Loblolly pine Longleaf pine Slash pine	84+4 71±5 84	Slight	Moderate	Moderate	Loblolly pine, slash pine.
Lynchburg: Ly	2w8	Loblolly pine Longleaf pine Slash pine Yellow-poplar	86+4 74±5 91±4 92	Slight	Moderate	Slight	Loblolly pine, slash pine, sweetgum, sycamore, yellow-poplar.
Lynn Haven: Lz	4w3	Loblolly pine Slash pine	1/ 70 1/ 70	Slight	Severe	Severe	Loblolly pine, slash pine.
McColl: Mc	2w9	Loblolly pine Longleaf pine Slash pine	87+6 69 86	Slight	Severe	Severe	Loblolly pine, slash pine, sycamore, sweetgum, water tupeloes.
Norfolk: NoA, NoB	2o1	Loblolly pine Longleaf pine Slash pine	86+5 68±4 86	Slight	Slight	Slight	Loblolly pine, slash pine.
Norfolk, moderately deep variant: NrA.	2o1	Loblolly pine Longleaf pine Slash pine	86+5 68±4 86	Slight	Slight	Slight	Loblolly pine, slash pine.
Olanta: On	2w2	Loblolly pine Slash pine	1/ 86 1/ 86	Slight	Moderate	Slight	Loblolly pine, slash pine.
Orangeburg: OrA, OrB, OrC, OrD.	2o1	Loblolly pine Slash pine Longleaf pine	86+5 86 70	Slight	Slight	Slight	Loblolly pine, slash pine.
Osier: Os	3w3	Slash pine Loblolly pine Longleaf pine	1/ 80 1/ 80 1/ 70	Slight	Severe	Moderate	Slash pine, loblolly pine.
Pantego: Pa	1w9	Loblolly pine Slash pine Sweetgum	1/ 96 1/ 96 1/ 90	Slight	Severe	Severe	Loblolly pine, slash pine, sweetgum.
Pocalla: PlB	3s2	Loblolly pine Slash pine Longleaf pine	1/ 80 1/ 80 1/ 65	Slight	Moderate	Moderate	Loblolly pine, slash pine.
Ponzer: Po	4w3	Loblolly pine Slash pine	1/ 70 1/ 70	Slight	Severe	Severe	Loblolly pine, slash pine.
Rains: Ra	2w3	Loblolly pine Slash pine Sweetgum	94+5 91±5 90	Slight	Severe	Severe	Loblolly pine, slash pine.
Rains, moderately deep variant: Rd.	2w3	Loblolly pine Slash pine Sweetgum	94+5 91±5 90	Slight	Severe	Severe	Loblolly pine, slash pine.

TABLE 4.—*Soil ratings for woodland use*—Continued

Soil series and map symbols	Woodland suitability group	Potential productivity		Management concerns			Species suitable for planting
		Tree species	Average site index and standard deviation	Erosion hazard	Equipment limitation	Seedling mortality	
Red Bay: ReA, ReB	2o1	Loblolly pine Slash pine Longleaf pine	89 87 70	Slight	Slight	Slight	Loblolly pine, slash pine.
Rembert: Rm	2w9	Loblolly pine Slash pine	1/ 92 1/ 92	Slight	Severe	Severe	Loblolly pine, slash pine, sweetgum, sycamore.
Rimini: Rs	5s3	Loblolly pine Longleaf pine Slash pine	1/ 65 55 1/ 65	Slight	Moderate	Severe	Longleaf pine, slash pine.
Rutlege: Ru	2w3	Loblolly pine Slash pine	86 86	Slight	Severe	Severe	Loblolly pine, slash pine.
Sunsweet: SuC, SuE	3c2	Loblolly pine Slash pine	1/ 80 1/ 80	Slight	Moderate	Moderate	Loblolly pine, slash pine.
Troup: TrB, TrD	3s2	Loblolly pine Longleaf pine Slash pine	82±5 64±5 84	Slight	Moderate	Moderate	Loblolly pine, longleaf pine, slash pine.
Varina: VaA, VaB	3o1	Loblolly pine Slash pine	1/ 85 1/ 85	Slight	Slight	Slight	Loblolly pine, slash pine.
Vaucluse: VcB, VcC, VcD	3o1	Loblolly pine Longleaf pine Slash pine	76±6 56±5 1/ 76	Slight	Slight	Slight	Loblolly pine, slash pine.
VeC2	4d2	Loblolly pine Slash pine Longleaf pine	1/ 70 1/ 70 1/ 50	Moderate	Moderate	Moderate	Loblolly pine, slash pine.
Wagram: WgB, WgC, WgD.	3s2	Loblolly pine Longleaf pine Slash pine	82±5 67±4 1/ 82	Slight	Moderate	Moderate	Loblolly pine, slash pine.
Wahee: Wh	2w8	Loblolly pine Slash pine Sweetgum	86±4 85 90	Slight	Moderate	Moderate	Loblolly pine, slash pine, sweetgum, sycamore.
*Wehadkee: Wk, Wn For ratings of Chastain soils in mapping unit Wk and Johnston soils in mapping unit Wn, see the Chastain and Johnston series, respectively.	1w9	Cottonwood Green ash Loblolly pine Sweetgum Willow oak Yellow-poplar	85 96 102 93±6 90 98±8	Slight	Severe	Severe	Cherrybark oak, cottonwood, green ash, loblolly pine, sweetgum, sycamore, slash pine, yellow poplar.

1/ Site index estimated.

WOODLAND SUITABILITY GROUP 2w3

In this group are deep to moderately deep, nearly level, poorly drained and very poorly drained soils that have high potential productivity. Equipment limitations and seedling mortality are severe in areas without adequate surface drainage. The soils are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), and longleaf pine (70). Species suitable for planting are slash pine and loblolly pine.

WOODLAND SUITABILITY GROUP 2w8

In this group are deep, nearly level to gently sloping, moderately well drained to somewhat poorly drained soils that have high potential productivity. Equipment restrictions are moderate, and seedling mortality is slight to moderate. The soils are suited to needleleaf and broadleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), sweetgum (90), yellow-poplar (100), water oak (90), blackgum (class not determined), red oaks (class not determined), and white oaks (class not determined). Species suitable for planting are loblolly pine, slash pine, yellow-poplar, sycamore, and sweetgum.

WOODLAND SUITABILITY GROUP 2w9

In this group are deep to moderately deep, nearly level, poorly drained and very poorly drained soils that have high potential productivity. Seedling mortality and equipment restrictions are severe on areas without adequate surface drainage. The soils are suited to broadleaf and needleleaf trees.

Important species of trees and their site class are loblolly pine (90), slash pine (90), tupelos (class not determined), cypress (class not determined), sweetgum (90), green ash (class not determined,), red oaks (class not determined), and white oaks (class not determined). Species suitable for planting are loblolly pine, slash pine, sweetgum, sycamore, water tupelo, Shumard oak, and water oak.

WOODLAND SUITABILITY GROUP 3o1

In this group are moderately deep to deep, nearly level to strongly sloping, well-drained soils that have moderately high productivity and no serious management problem. The soils are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (80), slash pine (80), and longleaf pine (60-70). Species suitable for planting are loblolly pine and slash pine.

WOODLAND SUITABILITY GROUP 3c2

In this group are moderately deep to deep, well-drained, firm to very firm soils that have moderately high productivity. Equipment limitations and seedling mortality are moderate. The soils are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (80), loblolly pine (80), and longleaf pine (60-70). A species suitable for planting is loblolly pine.

WOODLAND SUITABILITY GROUP 3s2

In this group are deep to moderately deep, nearly level to strongly sloping, well-drained sandy soils that have moderately high productivity. Equipment restrictions and seedling mortality are moderate. The soils are best suited to needleleaf trees.

Important species of trees and their site class are slash pine (80), loblolly pine (80), and longleaf pine (60-70). Species suitable for planting are slash pine and longleaf pine.

WOODLAND SUITABILITY GROUP 3w2

In this group are deep, nearly level, moderately well drained to somewhat poorly drained sandy soils that have moderately high potential productivity. Equipment restrictions are moderate and seedling mortality is slight to moderate. With adequate surface drainage these soils are best suited to needleleaf trees.

Important species of trees and site class are loblolly pine (80), slash pine (80), and longleaf pine (70). Species suitable for planting are slash pine and loblolly pine.

WOODLAND SUITABILITY GROUP 3w3

In this group are deep, nearly level, poorly drained to very poorly drained sandy soils that have a moderately high potential productivity. Equipment restrictions and seedling mortality are severe in places where surface drainage is not adequate. With adequate surface drainage these soils are best suited to needleleaf trees.

Important species of trees and site class are loblolly pine (80), slash pine (80), and longleaf pine (70). Species suitable for planting are slash pine and loblolly pine.

WOODLAND SUITABILITY GROUP 4s2

In this group are deep, nearly level to strongly sloping, excessively drained soils that have moderate productivity. Equipment restrictions and seedling mortality are moderate. The soils are best suited to needleleaf trees.

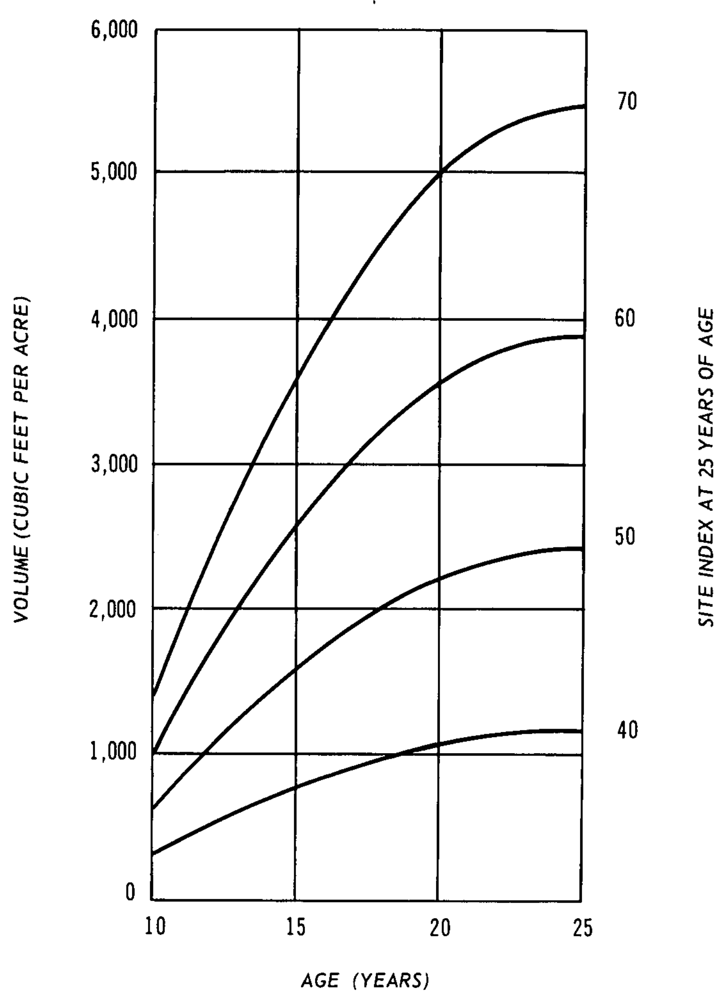

Figure 9.—Volume of merchantable wood (inside bark) to a 3-inch top in cubic feet per acre for loblolly pine plantations. Stocking: 700 trees per acre.

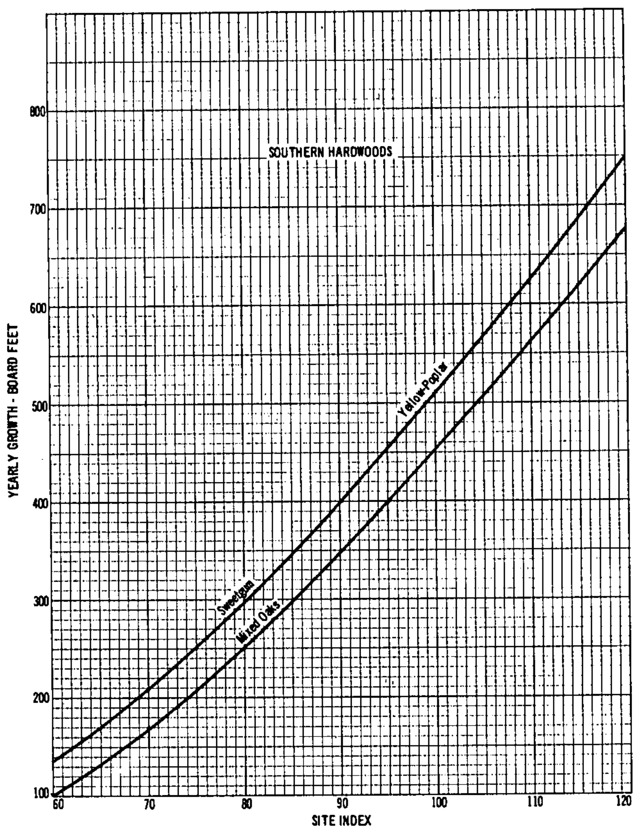

Figure 10.—Average yearly growth per acre in board feet for well-stocked, even-aged southern hardwood stands to age 60. (Scribner log rule.)

Important species of trees and their site class are slash pine (70), loblolly pine (70), and longleaf pine (60). Species suitable for planting are longleaf pine, sand pine, and slash pine.

WOODLAND SUITABILITY GROUP 4d2

In this group are moderately deep, gently sloping to sloping, well-drained, eroded soils that have moderate productivity. Erosion hazard, equipment restrictions, and seedling mortality are moderate as a result of moderate erosion and the rooting depths that are limited by fragipans. The soils are best suited to needleleaf trees.

Important species of trees and their site class are loblolly pine (70), slash pine (70), and longleaf pine (60). Species suitable for planting are loblolly pine and slash pine.

WOODLAND SUITABILITY GROUP 4w3

In this group are moderately deep to deep, nearly level, very poorly drained organic and sandy soils that are moderately productive. Equipment restrictions and seedling mortality are severe. With adequate surface drainage these soils are best suited to needleleaf trees.

Important species of trees and their site class are slash pine (70), loblolly pine (70), tupelos (class not determined), and magnolias (class not determined). Species suitable for planting are slash pine and loblolly pine.

WOODLAND SUITABILITY GROUP 5s3

In this group are deep, nearly level to strongly sloping, excessively drained sandy soils that have a hardpan. Productivity on these soils is low. Seedling mortality is severe, and equipment restrictions are moderate. The soils are best suited to needleleaf trees.

Important species of trees and their site class are longleaf pine (60) and slash pine (60). Species suitable for planting are longleaf pine, sand pine, and slash pine.

Woodland productivity

The volume of merchantable wood for loblolly pine plantations is shown in figure 9 on page 68 (*4,5*). The average yearly growth per acre in board feet of well-stocked, even-aged southern hardwood stands to age 60 is shown in figure 10.

Use of Soils for Wildlife Habitat[5]

The wildlife population of any area depends upon the availability of food, cover, and water in a suitable combination. Wildlife habitat is created, improved, or maintained by establishing desirable vegetation and developing water supplies in suitable places.

In table 5 each of the soils in Florence and Sumter Counties is rated according to its suitability for three classes of wildlife. These ratings refer only to the suitability of the soil and do not take into account the climate, the present use of the soil, or the distribution of wildlife and people. The suitability of individual sites has to be determined by inspection at the sites.

The soils in table 5 are rated as well suited, suited, poorly suited, and unsuited. *Well suited* means that habitat generally is easily created, improved, or maintained; that the soil has few or no limitations that affect management; and that satisfactory results can be expected. *Suited* means that habitat can be created, improved, or maintained in most places; that the soil has moderate limitations that affect management; and that moderate intensity of management and fairly frequent attention may be required for satisfactory results. *Poorly suited* indicates that habitat can be created, improved, or maintained in most places; that the soil has rather severe limitations; that habitat management is difficult and expensive and requires intensive effort; and that results are not always satisfactory. *Unsuited* indicates that it is impractical or perhaps impossible to create, improve, or maintain habitat, and that unsatisfactory results are probable.

The significance of the subheadings in table 5 is given in the following paragraphs.

Openland wildlife are quail, doves, cottontail rabbit, fox, meadowlark, field sparrow, and other birds and animals that normally live on cropland, pasture, meadow, lawn, and in other openland areas where grasses, herbs, and shrubby plants grow. Factors affecting the rating of suitability of a soil for openland wildlife are suitability of the soil for grain and seed crops, grasses and legumes, and wild herbaceous upland plants. The greater the soil slope or hazard of erosion, the less suitable a soil is for openland wildlife.

Woodland wildlife are squirrel, woodcock, thrush, vireo, deer, raccoon, wild turkey, and other birds and mammals that normally live in wooded areas where hardwood trees and shrubs and coniferous trees grow. Ratings are made on

[5]By WILLIAM W. NEELY, biologist, Soil Conservation Service.

TABLE 5.—*Use of the soils for wildlife habitat*

Soil	Openland wildlife	Woodland wildlife	Wetland wildlife
Barth loamy sand	Suited	Well suited	Poorly suited.
Brodgon sand	Suited	Suited	Unsuited.
Cahaba loamy fine sand, 0 to 3 percent slopes	Well suited	Well suited	Unsuited.
Cahaba-Leaf complex	Poorly suited	Well suited	Suited.
Cape Fear loam	Unsuited	Well suited	Suited.
Chastain soils, frequently flooded	Unsuited	Poorly suited	Well suited.
Chastain-Chewacla association, frequently flooded	Unsuited	Suited	Well suited.
Chastain-Chewacla-Congaree association, frequently flooded	Unsuited	Suited	Well suited.
Chewacla soils, frequently flooded	Unsuited	Suited	Well suited.
Chipley loamy sand, dark surface	Suited	Well suited	Poorly suited.
Congaree loam	Suited	Well suited	Suited.
Coxville fine sandy loam	Poorly suited	Well suited	Suited.
Duplin fine sandy loam	Suited	Suited	Poorly suited.
Duplin and Exum soils, 0 to 2 percent slopes	Suited	Suited	Poorly suited.
Duplin and Exum soils, 2 to 6 percent slopes	Suited	Suited	Unsuited.
Exum sandy loam	Suited	Suited	Poorly suited.
Faceville loamy sand, 0 to 2 percent slopes	Well suited	Well suited	Poorly suited.
Faceville loamy sand, 2 to 6 percent slopes	Suited	Well suited	Unsuited.
Faceville loamy sand, 6 to 15 percent slopes	Poorly suited	Suited	Unsuited.
Fuquay sand, 0 to 4 percent slopes	Suited	Suited	Unsuited.
Goldsboro loamy sand	Suited	Suited	Poorly suited.
Goldsboro loamy sand, moderately deep variant	Suited	Suited	Unsuited.
Greenville loamy sand, 0 to 2 percent slopes	Well suited	Well suited	Unsuited.
Greenville loamy sand, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Greenville loamy sand, 6 to 10 percent slopes	Suited	Suited	Unsuited.
Greenville sandy loam, 0 to 2 percent slopes	Well suited	Well suited	Unsuited.
Greenville sandy loam, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Hyde loam	Poorly suited	Well suited	Suited.
Irvington loamy sand, 0 to 2 percent slopes	Suited	Suited	Poorly suited.
Irvington loamy sand, 2 to 6 percent slopes	Suited	Suited	Unsuited.
Irvington loamy sand, 6 to 10 percent slopes	Poorly suited	Suited	Unsuited.
Irvington loamy sand, 6 to 10 percent slopes, eroded	Unsuited	Suited	Unsuited.
Johns fine sandy loam	Suited	Suited	Poorly suited.
Kalmia loamy sand	Well suited	Well suited	Unsuited.
Kenansville sand, 0 to 4 percent slopes	Suited	Suited	Unsuited.
Kershaw sand, 0 to 15 percent slopes	Poorly suited	Poorly suited	Unsuited.
Lakeland sand, 0 to 6 percent slopes	Poorly suited	Poorly suited	Unsuited.

TABLE 5.—*Use of the soils for wildlife habitat*—Continued

Soil	Openland Wildlife	Woodland Wildlife	Wetland Wildlife
Lakeland sand, 6 to 15 percent slopes	Unsuited	Unsuited	Unsuited.
Leaf fine sandy loam	Unsuited	Well suited	Suited.
Lenoir loam	Poorly suited	Well suited	Suited.
Lucy sand, 0 to 6 percent slopes	Suited	Suited	Unsuited.
Lucy sand, 6 to 10 percent slopes	Poorly suited	Suited	Unsuited.
Lynchburg sandy loam	Suited	Well suited	Poorly suited.
Lynn Haven sand	Unsuited	Poorly suited	Unsuited.
Made land. Onsite investigation needed.			
McColl fine sandy loam	Poorly suited	Suited	Poorly suited.
Mine pits and dumps. Onsite investigation needed.			
Norfolk loamy sand, 0 to 2 percent slopes	Well suited	Well suited	Poorly suited.
Norfolk loamy sand, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes	Well suited	Well suited	Poorly suited.
Olanta loamy sand	Suited	Suited	Unsuited.
Orangeburg loamy sand, 0 to 2 percent slopes	Well suited	Well suited	Poorly suited.
Orangeburg loamy sand, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Orangeburg loamy sand, 6 to 10 percent slopes	Suited	Suited	Unsuited.
Orangeburg loamy sand, 10 to 15 percent slopes	Poorly suited	Suited	Unsuited.
Osier loamy sand	Unsuited	Suited	Suited.
Pantego loam	Poorly suited	Well suited	Suited.
Pocalla sand, 0 to 4 percent slopes	Suited	Suited	Unsuited.
Ponzer soils	Unsuited	Suited	Suited.
Rains sandy loam	Poorly suited	Well suited	Suited.
Rains sandy loam, moderately deep variant	Poorly suited	Well suited	Suited.
Red Bay sandy loam, 0 to 2 percent slopes	Well suited	Well suited	Unsuited.
Red Bay sandy loam, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Rembert loam	Unsuited	Suited	Suited.
Rimini sand	Unsuited	Unsuited	Unsuited.
Rutlege loamy sand	Unsuited	Poorly suited	Unsuited.
Sunsweet loamy fine sand, 6 to 10 percent slopes	Poorly suited	Suited	Unsuited.
Sunsweet loamy fine sand, 10 to 25 percent slopes	Unsuited	Unsuited	Unsuited.
Swamp	Unsuited	Suited	Unsuited.
Troup sand, 0 to 6 percent slopes	Suited	Suited	Unsuited.
Troup sand, 6 to 15 percent slopes	Unsuited	Unsuited	Unsuited.
Varina loamy fine sand, 0 to 2 percent slopes	Well suited	Well suited	Poorly suited.

TABLE 5.—*Use of the soils for wildlife habitat*—Continued

Soil	Openland Wildlife	Woodland Wildlife	Wetland Wildlife
Varina loamy fine sand, 2 to 6 percent slopes	Well suited	Well suited	Unsuited.
Vaucluse loamy sand, 2 to 6 percent slopes	Suited	Suited	Unsuited.
Vaucluse loamy sand, 6 to 10 percent slopes	Poorly suited	Suited	Unsuited.
Vaucluse loamy sand, 10 to 15 percent slopes	Unsuited	Poorly suited	Unsuited.
Vaucluse sandy loam, 3 to 8 percent slopes, eroded	Unsuited	Suited	Unsuited.
Wagram sand, 0 to 6 percent slopes	Suited	Suited	Unsuited.
Wagram sand, 6 to 10 percent slopes	Poorly suited	Suited	Unsuited.
Wagram sand, 10 to 15 percent slopes	Unsuited	Unsuited	Unsuited.
Wahee fine sandy loam	Poorly suited	Well suited	Suited.
Wehadkee-Chastain association, frequently flooded	Unsuited	Suited	Well suited.
Wehadkee and Johnston soils, frequently flooded	Unsuited	Suited	Well suited.

the basis that the better a soil is suited to the growth of hardwood trees, hardwood woody plants, and wild herbaceous plants, the better the soil is suited for woodland wildlife species. Slope has little effect on the suitability of a soil for this kind of wildlife. In some instances, soils which produce vigorous growth in pines can be rated downward in their suitability for woodland wildlife.

Wetland wildlife are ducks, geese, rail, heron, shore birds, mink, and other birds and mammals that normally live in wet areas, marshes, and swamps. Suitability of a soil for shallow-water developments and for the growth of wetland food and cover plants are the major factors affecting the rating of a soil for wetland wildlife.

Engineering Uses of the Soils[6]

This section is useful to those who need information about soils used as structural material or as foundation upon which structures are built. Among those who can benefit from this section are planning commissions, town and city managers, land developers, engineers, contractors, and farmers.

Among properties of soils highly important in engineering are permeability, strength, compaction characteristics, drainage, shrink-swell potential, grain size, plasticity, and reaction. Also important are slope and depth to the water table and to bedrock. These properties, in various degrees and combinations, affect construction and maintenance of roads, airports, pipelines, foundations for small buildings, irrigations systems, ponds and small dams, and systems for disposal of sewage and refuse.

Information in this section of the soil survey can be helpful to those who—

1. Select potential residential, industrial, commercial, and recreational areas.
2. Evaluate alternate routes for roads, highways, pipelines, and underground cables.
3. Seek sources of gravel, sand, or clay.
4. Plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for controlling water and conserving soil.
5. Correlate performance of structures already built with properties of the kinds of soil on which they are built, for the purpose of predicting performance of structures on the same or similar kinds of soil in other locations.
6. Predict the trafficability of soils for cross-country movement of vehicles and construction equipment.
7. Develop preliminary estimates pertinent to construction in a particular area.

Most of the information in this section is presented in tables 6, 7, and 8, which show, respectively, results of engineering laboratory tests on soil samples; several estimated soil properties significant to engineering; and interpretations for various engineering uses. This information, along with the soil map and other parts of this publication, can be used to make interpretations in addition to those given in tables 6, 7, and 8. It also can be used to make other useful maps.

The engineering interpretations reported here do not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads and where the excavations are deeper than the depths of layers here reported. Estimates generally are made to a depth of about 5 feet, and interpretations do not apply to greater depths. Also, engineers should not apply specific values to the estimates for bearing capacity and traffic-supporting capacity given in this survey. Investigation of each site is needed because many delineated areas of a given soil mapping unit may contain small areas of other kinds of soil that have strongly contrasting properties and different suitabilities or limitations for soil engineering. Even in these situations, however, the soil map is useful in planning more detailed

[6]By CALVIN B. DERRICK, civil engineer, Soil Conservation Service.

field investigations and for the kinds of problems that may be expected.

Some of the terms used in this soil survey have special meaning in soil science and may not be known to all engineers. Many of the terms commonly used in soil science are defined in the Glossary at the back of this survey.

Engineering classification systems

The two systems most commonly used in classifying samples of soils for engineering are the Unified system (*11*) used by the SCS engineers, Department of Defense, and others, and the AASHO system (*1*) adopted by the American Association of State Highway Officials.

In the Unified system, soils are classified according to particle-size distribution, plasticity, liquid limit, and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes are designated by symbols for both classes; for example, ML-CL.

The AASHO system is used to classify soils according to those properties that affect use in highway construction and maintenance. In this system, a soil is placed in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. In group A-1 are gravelly soils of high bearing strength, or the best soils for subgrade (foundation). At the other extreme, in group A-7, are clay soils that have low strength when wet; these are the poorest soils for subgrade. Where laboratory data are available to justify a further breakdown, the A-1, A-2, and A-7 groups are divided as follows: A-1-a, A-1-b; A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As additional refinement, the engineering value of a soil material can be indicated by a group index number. Group indexes range from 0 for the best material to 20 or more for the poorest. The AASHO classification for tested soils, with group index number in parentheses, is shown in table 6; the estimated classification, without group index numbers, is given in table 7 for all soils mapped in the survey area.

Engineering test data

To help evaluate the soils for engineering purposes, soil samples from some representative profiles were tested according to standard procedures. The tests were performed by the South Carolina Highway Department in cooperation with the U.S. Department of Commerce, Bureau of Public Roads, according to standard procedures of the American Association of State Highway Officials (*1*). The test data are given in table 6. Grain-size distribution, liquid limit, and plasticity index were determined. The soils were subsequently classified according to the Unified Soil Classification System and the AASHO system.

The test data show some variations in the characteristics of the soils but probably do not show the entire range of variations in the lower horizons. Since each soil profile was sampled to a depth of about 5 feet, the data are not adequate for estimating the characteristics of soil material in deep cuts.

Mechanical analysis to determine the relative proportion of particles of different sizes was made by a combination of the sieve and hydrometer methods.

Liquid limit and plastic limit tests measure the effect of moisture on the consistence of soil material. As the moisture content of a clayey soil increases from a very dry state, the material changes from a semisolid to a plastic state. As the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material passes from a semisolid to a plastic state. The liquid limit is the moisture content at which the material passes from a plastic to a liquid state. The plasticity index is defined as the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil is in a plastic condition.

Soil properties significant to engineering

The soils in Florence and Sumter Counties and estimates of some of the properties that affect engineering work are given in table 7. Data are not given for Made land, Mine pits and dumps, or Swamp because these mapping units are variable.

Depth to seasonal high water table is the distance from the surface of the soil to the highest level that ground water reaches in the soil in most years. Because samples from only sixteen soil profiles were tested, it was necessary to estimate the AASHO and Unified engineering classifications and the significant physical properties of the rest of the soils. Estimates are based on previous tests of similar and like soils. The permeability, available water capacity, reaction (pH), and shrink-swell potential were estimated.

Permeability is the rate at which water is transmitted by soils. This is expressed as given volume passing a given area in a period of time (one cubic inch passing one square inch per hour). In table 7 this is given in inches of water per hour and is based on the movement of water through the undisturbed soil material. The rate depends largely on the texture and structure of the soil.

Available water capacity is the capacity of soils to hold water available for use by most plants. In table 7 it is the difference between the amount of soil water at field capacity and the amount at wilting point. It is expressed in inches of water per inch of soil.

Reaction is shown in numerical terms of pH. A pH value of less than 7.0 indicates that the soil is acid. If pH if more than 7.0, the soil is alkaline. Extreme acidity or alkalinity can have a significant effect on structures or on the treatment needed to stabilize the soils.

The shrink-swell potential is an indication of the volume change to be expected with a change in moisture content. It is estimated primarily on the basis of the amount and type of clay present. Soils that have a high clay content (CH and A-7), generally have a high shrink-swell potential. Clean sands and pebbles (single-grain structure) and those having small amounts of nonplastic to slightly plastic fines, as well as most other nonplastic to slightly plastic soil material, have a low shrink-swell potential.

Depth to bedrock is not shown in table 7. Bedrock is at such depth under most soils in this area that it has little effect on most uses of the soils. The moderately deep variants of Rains, Norfolk, and Goldsboro soils have iron-cemented sandstone at a depth of 30 to 60 inches.

Engineering interpretations

Table 8 gives the soil characteristics most likely to affect engineering practices. These characteristics are evaluated on the basis of test data shown in table 6, estimates given in table 7, or on actual field experience and performance.

TABLE 6.—*Engineering test data*

[Tests performed by the South Carolina State Highway Department under a cooperative agreement with the Bureau of Pub
accordance with standard procedures of the American Association of State Highway Officials (AASH

Soil name and location	South Carolina report No.	Depth	Mechanical analysis 1/				Liquid limit	Plasticity index
			Percentage passing sieve—			Percentage smaller than 0.005 mm.		
			No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)			
		Inches					Percent	
Chipley loamy sand, dark surface: Florence County: 2 miles southwest of Johnsonville, north side of State Highway 738, 0.25 mile southeast of intersection. (Modal)	G-41260	0-7	100	91	22	16	NP 3/	NP 3/
	G-41261	15-28	100	90	18	13	NP	NP
	G-41262	28-60	100	89	8	5	NP	NP
Florence County: 4 miles southwest of Johnsonville, west of county road 0.4 mile south of State Highway 58. (Finer textured in lower C horizon than modal)	G-41257	0-9	100	94	17	11	NP	NP
	G-41258	13-24	100	92	19	15	NP	NP
	G-41259	24-46	100	91	14	11	NP	NP
Duplin fine sandy loam: Florence County: 4 miles southeast of Lake City, 3,000 feet northeast of intersection of county road and State Highway 341. (Modal)	G-41245	0-7	100	98	52	22	NP	NP
	G-41247	11-18	100	98	70	48	38	18
	G-41246	42-72	100	99	80	57	51	25
Exum fine sandy loam: Florence County: 0.5 mile south of Poston, north of county road. (Modal for Exum soils in undifferentiated groups of Duplin and Exum soils)	G-41266	0-6	100	97	68	19	NP	NP
	G-41267	6-18	100	99	86	46	36	16
	G-41268	40-55	100	100	92	62	54	31
Goldsboro loamy sand: Florence County: 4 miles east of Timmonsville, 1.6 miles east of junction U.S. Highway 76 and State Highway 107. (Modal)	G-41230	0-7	100	71	29	8	NP	NP
	G-41231	15-23	100	77	45	28	28	12
	G-41232	28-52	100	72	40	22	23	10
Greenville loamy sand: Sumter County: 2 miles south of Stateburg, 1.25 miles east of State Highway 261. (Modal)	G-30858	0-7	100	77	24	9	NP	NP
	G-30857	7-10	100	75	28	14	NP	NP
	G-30856	14-106	100	84	57	48	36	18

Greenville sandy loam: Sumter County: 0.8 mile south of Wedgefield on State Highway 261, 0.75 mile southwest of south side of road. (Modal)	G-30829	0-5	100	88	43	29	22	10
	G-30830	5-26	100	91	62	54	36	5
	G-30831	26-72	100	90	61	53	42	14
Sumter County: 1.5 mile northwest of Haygood on Wateree Prison Farm. (More clay in surface layer than modal profile)	G-30841	0-5	100	91	56	29	24	6
	G-30842	5-22	100	97	70	48	41	19
	G-30843	22-72	100	99	78	53	46	19
Lynchburg sandy loam: Sumter County: 0.8 mile northwest of State Highway 53 on county road. (Modal)	G-30848	0-5	100	96	30	13	NP	NP
	G-30847	15-24	100	98	43	27	24	8
	G-30849	24-52	100	98	46	27	19	3
Sumter County: 0.6 mile east of Oswego, north side of State Highway 303, 400 feet from edge of woods. (Finer textured throughout than in modal profile)	G-30859	0-6	100	90	53	29	20	3
	G-30860	11-17	100	80	52	36	30	13
	G-30861	27-46	100	87	63	46	38	14
Orangeburg loamy sand: Sumter County: 2 miles northeast of Shaw Air Force Base, 100 feet north of State Highway 364. (Modal)	G-30827	0-7	100	77	21	7	NP	NP
	G-30828	20-38	100	83	39	29	25	9
	G-30826	38-46	100	84	45	37	34	17
Red Bay sandy loam: Sumter County: 1.25 miles east of Wedgefield on State Highway 763, 0.4 mile south on dirt road. (Modal)	G-30871	0-7	100	51	27	20	28	8
	G-30872	13-55	100	49	26	22	27	11
	G-30873	55-72	100	50	26	22	25	9
Sumter County: 3 miles south of Wedgefield. (Surface layer and lower subsoil coarser textured than in modal profile)	G-30868	0-8	100	44	16	12	NP	NP
	G-30869	8-35	100	52	25	22	22	7
	G-30870	35-72	100	49	21	19	24	9
Rembert loam: Sumter County: From intersection of State Highways 120 and 40, 0.6 mile north on Highway 40, 0.3 mile west on dirt road, in Carolina Bay north of dirt road. (Modal)	G-30865	4-7	100	71	36	29	44	7
	G-30866	11-18	100	89	66	58	47	23
	G-30867	27-35	100	77	34	26	27	7

TABLE 6.—*Engineering test data*—Continued

Soil name and location	South Carolina report No.	Depth	Mechanical analysis 1/				Liquid limit	Plasticity index
			Percentage passing sieve—			Percentage smaller than 0.005 mm.		
			No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)			
		Inches					Percent	
Varina loamy fine sand: Florence County: Pee Dee Experiment Station, 100 feet west of pecan orchard, 300 feet south of U.S. Highway 52. (Modal)	G-41251	0-8	100	99	56	10	NP	NP
	G-41252	22-36	100	99	64	38	30	11
	G-41253	57-72	100	98	61	35	37	11
Florence County: 1 mile northwest of Timmonsville, 200 feet east of State Highway 75. (Surface layer coarser textured than modal profile)	G-41248	0-8	100	76	33	7	NP	NP
	G-41249	8-35	100	85	60	40	34	15
	G-41250	49-72	100	85	67	49	47	20

1/ Mechanical analysis according to AASHO Designation: T 88-57 (1). Results by this procedure may differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service. In the AASHO procedure, the fine material is analyzed by the hydrometer method, and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method, and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analysis data used in this table are not suitable for naming textural classes for soils.

2/ Based on the Unified Soil Classificatio Conservation Service and Bureau of Public Ro consider that all soils having plasticity in points from the A-line are to be given a bor tion. Examples of borderline classification use are SM-SC and CL-ML.

3/ Nonplastic.

Highway engineering.—The data in tables 6, 7, and 8 are useful in determining the suitability of the soils for highway location and construction. Table 8 shows the suitability of each soil as a source for borrow material to be used as roadfill or topsoil. Table 7 gives the physical and chemical properties also of interest to engineers.

In Florence and Sumter Counties, bedrock presents no problem in road building but cannot be used as a footing for highway foundations. Exceptions would be the moderately deep variants of Rains, Norfolk, and Goldsboro soils. These have an iron-cemented sandstone layer at a depth of 30 to 60 inches.

Erosion on shoulders and on cut and fill slopes is one of the problems encountered in highway construction. Data shown in tables 7 and 8 will be useful in planning erosion control measures on these sites (fig. 11).

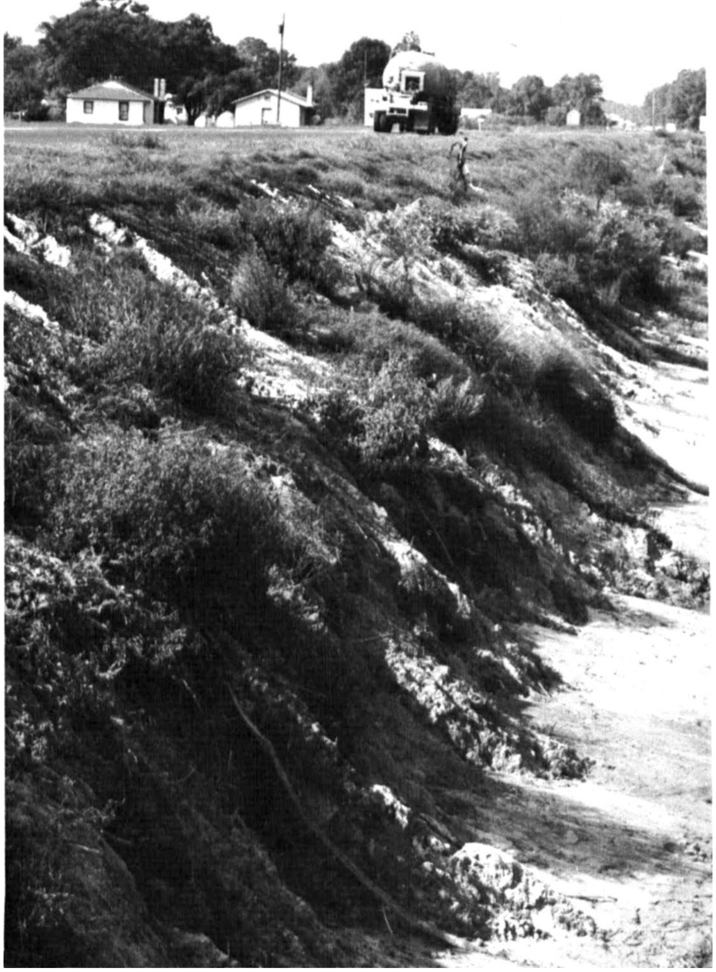

Figure 11.—Erosion of sandy loam highway fill that was obtained in an area of Goldsboro loamy sand.

Sanitary engineering.—Sanitary engineering planners will find soil information useful when designing facilities for sewage disposal or sanitary land fill. The suitability of a soil as a site for sewage lagoons or septic tank filter fields depends on the permeability of the soil, the depth to the water table, the hazard of flooding, and the depth to hard rock, if any. Water supplies and streams can be polluted by seepage or drainage from septic filter fields, garbage or trash dumps, and from animal waste disposal areas if they are located on highly permeable soils. The information and data given in tables 6, 7, and 8 will aid in site location and design of these treatment plants and areas.

Conservation engineering.—Conservation engineering includes the construction of farm ponds and terraces, land grading and smoothing, and the establishment of drainage and irrigation systems. The engineering tables in this section will assist in planning, designing, and laying out any of these agricultural and conservation projects.

Drainage engineers will find the data in table 8 useful for planning agricultural drainage systems, storm runoff canals, diversion ditches, or surface water disposal waterways. On any of these water disposal systems where vegetation is to be used for water velocity control or erosion preventive measures, the designer might wish to refer to the subsection "Management by Capability Units." That subsection discusses suitability of the soils for certain grasses and vegetative practices.

Because adequate outlets are essential for the effective operation of any drainage system, designers will be interested in the detailed maps at the back of this survey. The natural drainageway patterns and outlets and the various types of soils are shown on these maps.

Conservation Engineering information and assistance can be obtained from the local representative of the Soil Conservation Service.

Town and Country Planning

This section will be of special interest to county officials or others responsible for community planning, to individuals who plan to build a home, or to those who are concerned with the selection of a site for a building, an industry, a school, or a park.

Table 9, p. 92, gives the limitations of the soils when they are used as foundations for dwellings, septic tank filter fields, sewage lagoons, sites for light industries, trafficways, and recreation sites. The limitations are designated by using the ratings of *slight*, *moderate*, and *severe*. The soil properties that mainly determine the rating are also given.

A rating of *slight* means that the soils have few or no limitations or that the limitations can be easily overcome. A rating of *moderate* indicates that the limitations are present and must be recognized, but that they can be overcome by practical means. A rating of *severe* indicates that suitability of the soils for the specified use is questionable because the limitations are difficult to overcome or are so restrictive it may not be practical to overcome them.

Listed in the following paragraphs are the soil properties considered when the limitations were rated for the uses indicated in table 9.

Limitations are rated for soils used as the foundations for dwellings of three stories or less that have public or community sewage systems. The factors used in rating these limitations are wetness, flooding (fig. 12), relative load supporting capacity based on unified classification, shrink-swell potential, and slope.

For filter fields, those properties were considered that affect the absorption of effluent and that affect the construction and operation of the tile system. The properties considered are permeability, depth to water table, flooding hazard, slopes, and depth to rock, if applicable. It should be

TABLE 7.—*Estimated soil properties*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or
and for this reason it is necessary to follow carefully the instructions for referring to other series that
are variable, and their properties were

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture	Classification: Unified	Classification: AASHO
	Feet	Inches			
Barth: Ba	1-1/2-2-1/2	0-34	Loamy sand	SM	A-2
		34-60	Sand	SP-SM	A-3
Brogdon: Br	1/ >6	0-15	Sand and loamy sand	SM or SP-SM	A-2 or A-3
		15-29	Sandy loam	SM-SC	A-2
		29-48	Loamy sand and sand	SM	A-2
		48-78	Sandy clay loam and sandy loam.	SC or SM	A-2 or A-6
*Cahaba: CaA, Cb. For properties of the Leaf soils in mapping unit Cb, see Leaf series.	4-6	0-11	Loamy fine sand and fine sandy loam.	SM	A-4 or A-2
		11-42	Sandy clay loam and fine sandy loam.	SC or CL	A-6
		42-63	Sand	SP-SM or SM	A-3 or A-2
Cape Fear: Ce	2/ 0-1	0-11	Loam	ML-CL	A-6
		11-52	Clay and clay loam	CH	A-7
		52-62	Sandy clay loam	CL	A-6
		62-72	Loamy sand and sand	SM or SP-SM	A-2 or A-3
*Chastain: Cf, Cg, Ch. For properties of the Chewacla soils in mapping units Cg and Ch and the Congaree soils in mapping unit Ch, see the Chewacla and Congaree series, respectively.	2/ 0-1	0-4	Clay loam	ML-CL	A-6
		4-52	Clay loam and clay	CH	A-7
		52-75	Clay loam	ML-CL	A-6
Chewacla: Cm	2/0-1-1/2	0-7	Silty clay loam	ML-CL	A-7
		7-29	Loam	ML-CL	A-6
		29-74	Sandy clay loam, fine sandy loam, and loam.	CL	A-6
Chipley: Cn	1-2	0-7	Loamy sand	SM	A-2
		7-60	Loamy sand and sand	SM or SP-SM	A-2 or A-3
Congaree: Co	2/2-3	0-16	Loam	ML-CL	A-4
		16-62	Silty clay loam	ML-CL	A-6
		62-72	Silt loam	ML	A-4
Coxville: Cv	0-1	0-6	Fine sandy loam	SM or ML	A-4
		6-22	Sandy clay loam	CL or SC	A-6
		22-75	Sandy clay	CL or SC	A-7
*Duplin: Dp, DuA, DuB. For properties of Exum soils in mapping units DuA and DuB, see Exum fine sandy loam.	1-1/2-2-1/2	0-11	Fine sandy loam	ML or SM	A-4
		11-42	Clay loam	CL	A-6
		42-72	Clay	CH	A-7
Exum: Ex	2-3	0-7	Sandy loam	SM	A-2 or A-4
		7-37	Clay loam	CL	A-6
		37-61	Clay loam and clay	CL	A-6 or A-7
		61-72	Sandy clay loam	SC or CL	A-6
Exum fine sandy loam. Mapped only in undifferentiated groups with Duplin soils.	2-3	0-6	Fine sandy loam	ML	A-4
		6-26	Clay loam	CL	A-6
		26-55	Silty clay loam	CH	A-7
		55-72	Clay	CH	A-7
Faceville: FaA, FaB, FaD	1/ >6	0-12	Loamy sand	SM	A-2
		12-72	Sandy clay	SC or CL	A-7

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more kinds of soil. The soils in such mapping units may have different properties and limitations, appear in the first column of this table. Made land (Ma), Mine pits and dumps (Mp), and Swamps (Sw) not estimated. < = less than; > = more than]

Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				
			Inches per hour	Inches per inch of soil	pH value	
100	65-80	10-20	2.0-6.3	0.06-0.09	4.5-6.0	Low.
100	50-70	5-10	6.3-20.0	0.05-0.07	5.1-5.5	Low.
100	60-75	5-15	2.0-6.3	0.07-0.10	5.1-6.0	Low.
100	60-70	20-35	0.63-2.0	0.11-0.14	4.5-5.5	Low.
100	60-75	12-20	2.0-6.3	0.07-0.09	4.5-5.5	Low.
100	65-80	25-45	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	80-95	25-40	2.0-6.3	0.10-0.14	4.5-5.5	Low.
100	85-95	40-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	50-65	5-15	6.3-20.0	<0.05	4.5-5.5	Low.
100	85-95	60-75	0.63-2.0	0.15-0.18	4.5-5.5	Low.
100	90-100	75-95	0.06-0.2	0.12-0.15	4.5-5.5	Moderate.
100	90-100	50-70	0.20-0.63	0.12-0.15	4.5-5.5	Low.
100	50-70	5-15	6.3-20.0	0.05-0.08	4.5-5.5	Low.
100	90-100	70-80	0.20-0.63	0.15-0.18	4.5-5.5	Low to moderate.
100	95-100	75-95	0.06-0.20	0.15-0.18	5.1-5.5	Moderate.
100	90-100	70-80	0.20-0.63	0.15-0.18	5.1-6.0	Low to moderate.
100	95-100	85-95	0.20-0.63	0.15-0.18	4.5-6.0	Low to moderate.
100	85-95	60-75	0.63-2.0	0.15-0.18	5.1-6.0	Low to moderate.
100	85-95	50-75	0.63-2.0	0.15-0.18	5.1-6.0	Low to moderate.
100	90-95	15-25	2.0-6.3	0.06-0.10	4.5-6.0	Low.
100	85-95	5-25	6.3-20.0	0.06-0.09	4.5-6.0	Low.
100	85-95	60-75	0.63-2.0	0.15-0.18	5.1-6.5	Low.
100	95-100	85-95	0.63-2.0	0.15-0.18	5.1-5.5	Low.
100	90-100	70-90	0.63-2.0	0.15-0.18	5.1-5.5	Low.
100	80-95	40-55	0.63-2.0	0.12-0.15	4.5-6.5	Low.
100	85-95	45-55	0.20-0.63	0.12-0.15	4.5-6.0	Low.
100	85-95	45-60	0.20-0.63	0.12-0.15	4.5-6.0	Low to moderate.
100	80-100	40-55	2.0-6.3	0.12-0.15	5.1-6.0	Low.
100	90-100	70-80	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
100	90-100	75-90	0.06-0.20	0.12-0.15	4.5-5.5	Low to moderate.
100	65-80	30-40	2.0-6.3	0.10-0.14	5.1-6.0	Low.
100	90-100	70-80	0.20-0.63	0.12-0.15	4.5-5.5	Low.
100	90-100	70-80	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
100	80-90	35-55	0.20-0.63	0.10-0.14	4.5-5.0	Low.
100	80-100	55-70	2.0-6.3	0.12-0.15	5.1-6.0	Low.
100	90-100	75-90	0.20-0.63	0.12-0.15	4.5-5.5	Low.
100	90-100	85-95	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
100	90-100	80-95	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
100	50-75	15-30	2.0-6.3	0.06-0.10	5.1-6.5	Low.
100	85-95	45-60	0.63-2.0	0.12-0.15	5.1-6.0	Low to moderate.

TABLE 7.—*Estimated soil properties*

Soils series and map symbols	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture	Classification: Unified	Classification: AASHO
	Feet	Inches			
Fuquay: FuB	1/ >6	0-27	Sand and loamy sand	SM	A-2
		27-35	Sandy loam	SM-SC	A-2 or A-4
		35-72	Sandy clay loam	SC or CL	A-6
Goldsboro: Go	1-1/2-2-1/2	0-15	Loamy sand	SM	A-2
		15-72	Sandy clay loam	SC or CL	A-6 or A-4
Goldsboro, moderately deep variant: Gp.	1-1/2-2-1/2	0-8	Loamy sand	SM	A-2
		8-13	Fine sandy loam	SM	A-4
		13-39	Sandy clay loam	SC	A-6 or A-4
		39	Ironstone.		
Greenville:					
GrA, GrB, GrC	1/ >6	0-10	Loamy sand	SM	A-2
		10-84	Sandy clay and clay	CL	A-6
GsA, GsB	1/ >6	0-5	Sandy loam	SM, SC, or CL-ML	A-4
		5-72	Sandy clay	CL or ML	A-7, A-6, or A-4
Hyde: Hy	0-1	0-10	Loam	ML-CL	A-4
		10-64	Loam and silt loam	CL	A-6
		64-74	Clay loam	CL	A-6
Irvington: IrA, IrB, IrC, IrC2	4-6	0-15	Loamy sand	SM or SP-SM	A-2
		15-26	Sandy clay loam	SC or CL	A-6
		26-52	Sandy clay loam (fragipan).	SC or CL	A-6
		52-80	Sandy clay loam and sandy loam.	SC	A-6 or A-2
Johns: Jo	1-1/2-2-1/2	0-13	Fine sandy loam	SM	A-4
		13-41	Sandy clay loam	SC or CL	A-6
		41-60	Sand	SP	A-3 or A-1-b
Johnston. Mapped only in undifferentiated group with Wehadkee soils.	2/0-1	0-9	Loam	ML or CL	A-4 or A-6
		9-37	Sandy loam and fine sandy loam.	SM	A-4
		37-70	Fine sand	SP-SM or SM	A-3 or A-2
Kalmia: Ka	4-6	0-16	Loamy sand and sandy loam.	SM	A-2
		16-37	Sandy clay loam and sandy loam.	SC	A-2 or A-6
		37-72	Sand	SP-SM or SM	A-3, A-2, or A-1-b
Kenansville: KeB	1/ >6	0-20	Sand	SP-SM or SM	A-3 or A-2
		20-40	Sandy loam	SM	A-2
		40-72	Sand	SP or SP-SM	A-3
Kershaw: KhD	1/ >6	0-76	Sand	SP	A-3
Lakeland: LaB, LaD	1/ >6	0-80	Sand	SP-SM	A-3
Leaf: Ls	2/0-1	0-5	Fine sandy loam	ML or SM	A-4
		5-47	Clay	CH	A-7
		47-70	Clay loam and clay	CH	A-7
Lenoir: Lt	1-2	0-7	Loam	ML	A-4
		7-15	Clay loam	CH	A-7
		15-78	Clay	CH	A-7
Lucy: LuB, LuC	1/ >6	0-28	Sand and loamy sand	SM	A-2
		28-79	Sandy clay loam and sandy loam.	SC	A-6 or A-2

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Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				
			Inches per hour	Inches per inch of soil	pH value	
100	65-80	10-25	6.3-20.0	0.05-0.08	4.5-5.5	Low.
100	70-85	30-40	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	80-90	35-55	0.06-0.20	0.10-0.14	4.5-5.5	Low.
100	60-75	15-30	2.0-6.3	0.10-0.14	5.1-6.0	Low.
100	75-90	35-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
98-100	60-75	15-30	2.0-6.3	0.10-0.14	4.5-5.5	Low.
100	70-85	35-50	0.63-2.0	0.12-0.15	4.5-5.0	Low.
100	70-85	35-50	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	70-80	15-30	2.0-6.3	0.06-0.10	5.1-6.5	Low.
100	80-95	50-65	0.63-2.0	0.12-0.15	4.5-6.5	Low to moderate.
100	75-95	40-60	2.0-6.3	0.10-0.12	5.1-6.5	Low.
100	85-100	60-80	0.63-2.0	0.12-0.15	4.5-6.5	Low to moderate.
100	85-95	60-75	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	90-100	70-90	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
100	90-100	70-80	0.20-0.63	0.12-0.15	4.5-5.5	Low to moderate.
98-100	50-75	10-20	6.3-20.0	0.06-0.10	5.1-6.0	Low.
100	80-90	35-55	0.63-2.0	0.10-0.14	4.5-5.5	Low.
100	80-90	40-55	0.06-0.20	0.08-0.10	4.5-5.5	Low.
100	75-90	30-50	0.63-2.0	0.08-0.10	4.5-5.0	Low.
100	70-85	35-50	2.0-6.3	0.12-0.15	4.5-5.5	Low.
100	80-90	35-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	40-60	<5	6.3-20.0	<0.05	4.5-5.5	Low.
100	80-90	60-75	2.0-6.3	0.15-0.18	4.5-5.5	Low to moderate.
100	70-85	40-50	2.0-6.3	0.12-0.15	4.5-5.5	Low.
100	65-80	5-15	6.3-20.0	0.05-0.07	4.5-5.5	Low.
100	50-75	15-30	2.0-6.3	0.06-0.10	5.1-6.0	Low.
100	70-85	30-45	0.63-2.0	0.10-0.14	4.5-5.5	Low.
100	40-60	5-15	6.3-20.0	<0.05	4.5-5.5	Low.
100	50-70	5-15	6.3-20.0	0.05-0.08	4.5-6.0	Low.
100	60-70	25-35	2.0-6.3	0.08-0.10	4.5-6.0	Low.
100	50-70	3-10	6.3-20.0	<0.05	4.5-6.0	Low.
100	50-70	<5	>20.0	<0.05	4.5-5.5	Low.
100	50-70	5-10	6.3-20.0	0.05-0.08	5.0-6.5	Low.
100	80-95	40-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	90-100	75-95	<0.06	0.12-0.15	4.0-5.5	Moderate.
100	90-100	75-95	0.06-0.20	0.12-0.15	4.0-5.5	Moderate.
100	85-95	60-75	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	90-100	70-80	0.06-0.20	0.12-0.15	4.5-5.5	Moderate.
100	90-100	75-95	0.06-0.20	0.12-0.15	4.5-5.5	Moderate.
100	60-75	12-20	6.3-20.0	0.05-0.08	5.1-6.0	Low.
100	75-85	25-45	0.63-2.0	0.12-0.14	4.5-5.5	Low.

TABLE 7.—*Estimated soil properties*

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	Classification		
			Dominant USDA texture	Unified	AASHO
	Feet	Inches			
Lynchburg: Ly	1-2	0-15	Sandy loam and fine sandy loam.	SM or CL	A-2 or A-4
		15-63	Sandy clay loam	SC or CL	A-4 or A-6
		63-72	Clay loam	CL	A-6 or A-7
Lynn Haven: Lz	0-1	0-12	Sand	SP-SM or SM	A-3 or A-2
		12-29	Loamy sand (fragipan)	SM	A-2
		29-55	Sand	SP	A-3
		55-72	Sandy loam	SM	A-2
McColl: Mc	0-1	0-5	Fine sandy loam	SM	A-4 or A-2
		5-17	Sandy clay	CL or SC	A-7
		17-50	Sandy clay loam (fragipan).	SC or CL	A-6
		50-84	Sandy loam	SM	A-2
Norfolk: NoA, NoB	4-6	0-13	Loamy sand	SM	A-2
		13-68	Sandy clay loam	SC or CL	A-6 or A-2
		68-80	Sandy clay	SC or CL	A-7
Norfolk, moderately deep variant: NrA.	4-6	0-18	Loamy sand	SM	A-2
		18-40	Sandy clay loam	SC	A-6 or A-2
		40-44	Sandy loam	SM-SC	A-2 or A-4
		44	Ironstone.		
Olanta: On	2-3	0-11	Loamy sand	SM	A-2
		11-42	Sandy loam and loamy sand.	SM-SC	A-2
		42-75	Sand	SP-SM or SM	A-3 or A-2
Orangeburg: OrA, OrB, OrC, OrD	1/> 6	0-16	Loamy sand	SM	A-2
		16-60	Sandy clay loam	SC or CL	A-6 or A-4
		60-80	Sandy clay	SC or CL	A-7 or A-6
Osier: Os	2/0-1	0-31	Sand and loamy sand	SM or SM-SP	A-2
		31-72	Sand	SP	A-3
Pantego: Pa	0-1	0-10	Loam	ML	A-4
		10-60	Sandy clay loam	SC or CL	A-6
Pocalla: PlB	1/> 6	0-27	Sand	SM or SM-SP	A-2 or A-3
		27-41	Sandy loam	SM	A-2
		41-62	Loamy sand	SM	A-2
		62-75	Sandy clay loam	SC	A-2 or A-6
Ponzer: Po	0-1	0-22	Muck	OL	A-4
		22-72	Sand to clay loam, loam.	SM-SC	A-2 or A-4
Rains: Ra	0-1	0-12	Sandy loam	SM	A-2
		12-79	Sandy loam and sandy clay loam.	SC or CL	A-6 or A-2
		79-85	Sand	SP-SM	A-3 or A-1-b
Rains, moderately deep variant: Rd	0-1	0-14	Sandy loam	SM	A-2
		14-30	Sandy clay loam	SC	A-6
		30-36	Sandy loam	SM	A-2
		36	Ironstone.		
Red Bay: ReA, ReB	1/> 6	0-13	Sandy loam	SM or SC	A-2 or A-1-b
		13-72	Sandy loam	SC	A-2
Rembert: Rm	0-1	0-4	Loam	ML-CL or CL	A-6 or A-7
		4-11	Sandy clay loam	SC or SM	A-6 or A-5
		11-27	Sandy clay and clay	CL	A-7
		27-72	Sandy clay loam	SC or SM-SC	A-2 or A-6
Rimini: Rs	4-6	0-58	Sand	SP	A-3
		58-70	Sand (hardpan)	SP	A-3
		70-88	Sand	SP	A-3

significant to engineering—Continued

Percentage passing sieve— No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	Permeability	Available water capacity	Reaction	Shrink-swell potential
			Inches per hour	Inches per inch of soil	pH value	
100	80-98	25-55	2.0-6.3	0.10-0.14	4.0-5.5	Low.
100	80-98	40-65	0.63-2.0	0.12-0.15	4.0-5.5	Low.
100	90-100	70-80	0.63-2.0	0.12-0.15	4.0-5.5	Low.
100	70-80	5-15	6.3-20.0	0.05-0.08	4.0-5.5	Low.
100	60-75	12-20	0.63-2.0	0.05-0.08	4.0-5.5	Low.
100	50-65	< 5	6.3-20.0	0.05-0.08	4.0-5.5	Low.
100	65-80	25-35	2.0-6.3	0.06-0.10	4.0-5.5	Low.
100	70-85	30-45	0.63-2.0	0.12-0.15	5.1-7.3	Low.
100	85-95	45-60	0.06-0.20	0.12-0.15	4.5-5.5	Low to moderate.
100	80-90	35-55	0.06-0.20	0.08-0.10	4.5-5.5	Low.
100	55-70	20-30	0.63-2.0	0.10-0.14	4.5-5.5	Low.
100	60-75	15-30	2.0-6.3	0.06-0.10	5.1-6.0	Low.
100	70-85	30-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	80-90	40-55	0.63-2.0	0.10-0.14	4.5-5.5	Low.
98-100	60-75	15-30	2.0-6.3	0.06-0.10	4.5-5.5	Low.
95-100	70-85	30-50	0.63-2.0	0.12-0.15	4.5-5.5	Low.
80-100	60-70	30-40	0.63-2.0	0.10-0.14	4.5-5.5	Low.
100	50-75	12-20	2.0-6.3	0.06-0.10	5.1-6.5	Low.
100	50-70	15-30	0.63-2.0	0.10-0.14	4.5-6.0	Low.
100	50-70	5-15	6.3-20.0	0.05-0.08	4.5-6.0	Low.
100	70-85	15-30	2.0-6.3	0.06-0.10	5.1-6.0	Low.
100	80-95	35-55	0.63-2.0	0.12-0.15	5.1-5.5	Low.
100	85-95	45-60	0.63-2.0	0.10-0.14	5.1-5.5	Low.
100	65-80	10-15	6.3-20.0	0.05-0.08	4.5-5.5	Low.
100	60-75	< 5	> 20.0	< 0.05	4.5-5.5	Low.
100	80-90	50-70	0.63-2.0	0.12-0.15	4.0-6.0	Low.
100	85-95	35-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	50-70	5-15	6.3-20.0	0.07-0.10	5.6-6.0	Low.
100	50-75	15-30	0.63-2.0	0.11-0.14	4.5-5.5	Low.
100	50-75	15-30	2.0-6.3	0.07-0.09	4.5-5.5	Low.
100	60-80	30-50	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	95-100	80-100	0.06-0.20	0.12-0.14	4.0-5.5	Moderate.
100	70-85	30-40	0.63-2.0	0.10-0.12	4.0-5.5	Low.
100	65-85	20-35	0.63-2.0	0.10-0.14	4.0-5.5	Low.
100	60-85	30-55	0.63-2.0	0.12-0.15	4.0-5.5	Low.
100	40-70	5-10	6.3-20.0	< 0.05	4.5-5.5	Low.
98-100	65-80	20-35	0.63-2.0	0.10-0.14	4.5-5.5	Low.
95-100	70-85	35-50	0.63-2.0	0.12-0.15	4.5-5.5	Low.
70-100	60-75	25-35	0.63-2.0	0.10-0.14	4.5-5.5	Low.
100	40-60	15-30	2.0-6.3	0.10-0.12	4.5-5.5	Low.
100	48-65	20-35	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	85-95	50-65	0.63-2.0	0.12-0.15	4.0-5.5	Low.
100	70-85	35-50	0.06-0.20	0.12-0.15	4.0-5.0	Low to moderate.
100	85-95	65-80	0.06-0.20	0.12-0.15	4.0-5.5	Low to moderate.
100	68-85	25-40	0.63-2.0	0.12-0.15	4.0-4.5	Low.
100	50-70	2-5	> 20.0	0.03-0.05	4.0-5.5	Low.
100	50-70	2-5	0.63-2.0	0.03-0.05	4.0-5.5	Low.
100	50-70	2-5	> 20.0	0.02-0.05	4.0-5.5	Low.

TABLE 7.—*Estimated soil properties*

Soil series and map symbols	Depth to seasonal high water table	Depth from surface	Classification: Dominant USDA texture	Classification: Unified	Classification: AASHO
	Feet	Inches			
Rutlege: Ru	2/ 0-1	0-20	Loamy sand	SM	A-2
		20-72	Sand	SP-SM or SM	A-3 or A-2
Sunsweet: SuC, SuE	1/ >6	0-11	Loamy fine sand	SM	A-2
		11-48	Clay	MH	A-7
		48-55	Sandy clay	CL	A-7
		55-75	Loamy sand	SM	A-2
Troup: TrB, TrD	1/ >6	0-54	Sand	SP-SM	A-3
		54-82	Sandy clay loam	SC	A-6
Varina: VaA, VaB	4-6	0-15	Loamy fine sand	SM or ML	A-4 or A-2
		15-36	Sandy clay	CL or SC	A-7 or A-6
		36-72	Sandy clay and sandy clay loam.	CL, SC or ML	A-7 or A-6
Vaucluse: VcB, VcC, VcD	1/ >6	0-18	Loamy sand and sand	SM	A-2
		18-27	Sandy clay loam	SC	A-6
		27-64	Sandy clay and sandy clay loam (fragipan).	SC	A-6
		64-82	Sandy clay loam	SC	A-6
VeC2	1/ >6	0-5	Sandy loam	SM	A-2
		5-24	Sandy clay loam	SC	A-6
		24-54	Sandy clay loam (fragipan).	SC	A-6
		54-72	Sandy clay loam to sandy loam.	SC	A-6
Wagram: WgB, WgC, WgD	1/ >6	0-26	Sand	SM or SP-SM	A-2
		26-59	Sandy clay loam	SC	A-6
		59-75	Sandy clay	SC	A-7
Wahee: Wh	1-2	0-7	Fine sandy loam	SM or ML	A-4
		7-54	Clay loam and silty clay loam.	CH or MH	A-7
		54-71	Clay loam and loam	CL	A-6
		71-80	Sand	SM	A-2
*Wehadkee: Wk, Wn. For properties of the Chastain soils in mapping unit Wk and the Johnston soils in mapping unit Wn, see the Chastain and Johnston series, respectively.	2/ 0-1	0-7	Fine sandy loam	ML or SM	A-4
		7-48	Fine sandy loam and sandy clay loam.	SC or CL	A-6
		48-65	Sand	SP-SM	A-3

1/ Water table below normal investigation for field mapping.

2/ Soils are subject to flooding.

significant to engineering—Continued

Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-well potential
No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				
			Inches per Hour	Inches per inch or soil	pH value	
100	55-70	15-30	6.3-20.0	0.05-0.08	4.0-5.5	Low.
100	50-70	5-15	6.3-20.0	<0.05	4.0-5.5	Low.
100	80-95	20-35	2.0-6.3	0.09-0.12	5.1-6.5	Low.
100	90-100	75-95	0.20-0.63	0.12-0.15	4.0-5.5	Moderate.
100	85-95	50-65	0.20-0.63	0.10-0.14	4.0-5.5	Moderate.
100	60-75	15-30	2.0-6.3	0.06-0.10	4.5-5.0	Low.
100	60-75	5-10	6.3-20.0	<0.05	4.0-5.5	Low.
100	75-90	35-50	0.63-2.0	0.10-0.14	4.0-5.5	Low.
100	75-100	30-60	2.0-6.3	0.10-0.14	5.6-6.5	Low.
100	80-100	45-65	0.63-2.0	0.12-0.15	5.1-6.0	Low to moderate.
100	80-100	45-70	0.06-0.20	0.10-0.14	4.5-5.5	Low to moderate.
100	60-75	12-20	6.3-20.0	0.05-0.08	4.5-5.5	Low.
100	80-90	35-50	0.20-0.63	0.08-0.10	4.5-5.5	Low.
100	70-85	35-50	0.06-0.20	0.08-0.10	4.5-5.5	Low.
100	65-80	35-50	0.63-2.0	0.08-0.10	4.5-5.5	Low.
100	65-80	20-35	2.0-6.3	0.09-0.12	4.5-5.5	Low.
100	80-90	35-50	0.20-0.63	0.08-0.10	4.5-5.5	Low.
100	70-85	35-50	0.06-0.20	0.08-0.10	4.5-5.5	Low.
100	65-80	35-50	0.63-2.0	0.08-0.10	4.5-5.5	Low.
100	65-80	10-20	6.3-20.0	0.05-0.08	5.1-6.0	Low.
100	80-90	35-50	0.63-2.0	0.12-0.14	4.5-5.5	Low.
100	85-95	40-50	0.63-2.0	0.12-0.14	4.5-5.5	Low.
100	85-95	40-55	0.63-2.0	0.12-0.15	4.5-5.5	Low.
100	90-100	75-90	0.06-0.20	0.12-0.15	4.5-5.5	Low to moderate.
100	90-100	70-80	0.20-0.63	0.12-0.15	4.5-5.5	Low.
100	50-65	12-20	6.3-20.0	<0.05	4.5-5.5	Low.
100	75-90	40-55	0.63-2.0	0.12-0.15	5.1-6.0	Low.
100	75-90	40-55	0.63-2.0	0.12-0.15	5.1-6.5	Low.
100	55-70	5-10	6.3-20.0	<0.05	5.5-7.3	Low.

TABLE 8.—*Engineering interpretations*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of and for this reason it is necessary to follow carefully the instructions for referring to other series are variable. and interpretations

Soil series and map symbols	Suitability as a source of—		Soil features adversely affecting—	
	Topsoil	Road fill	Agricultural drainage	Sprinkler irrigation
Barth: Ba	Poor	Fair	High water table; unstable sand at a depth of about 3 feet.	High water table; low available water capacity.
Brogdon: Br	Poor	Fair	Well drained	Medium to low available water capacity.
*Cahaba: CaA, Cb. For interpretations of Leaf soils in mapping unit Cb, see the Leaf series.	Fair	Fair to good.	Well drained	(1/)
Cape Fear: Ce	Fair	Poor	Slow permeability; high water table; flooding.	High water table; flooding
*Chastain: Cf, Cg, Ch. For interpretations of Chewacla soils in mapping units Cg and Ch, and Congaree soils in mapping unit Ch, see the Chewacla and Congaree series, respectively.	Fair	Poor	Slow permeability; high water table; flooding.	High water table; flooding
Chewacla: Cm	Fair	Fair	High water table; flooding.	High water table; flooding
Chipley: Cn	Poor	Fair	High water table; unstable sand.	High water table; low available water capacity.
Congaree: Co	Good	Fair	Flooding	Moderately slow infiltration; flooding.
Coxville: Cv	Fair	Poor	Moderately slow permeability; high water table; flooding; ponding.	Moderately slow infiltration; high water table.
*Duplin: Dp, DuA, DuB. For interpretations of Exum soils in mapping units DuA and DuB, see the Exum series.	Fair	Fair	High water table	Moderately slow infiltration; high water table.
Exum: Ex	Fair	Fair	High water table	High water table
Faceville: FaA, FaB, FaD	Good	Fair	Well drained	(1/)
Fuquay: FuB	Poor	Fair	Well drained	Low to medium available water capacity.
Goldsboro: Go	Fair	Fair	High water table	(1/)
Goldsboro, moderately deep variant: Gp	Fair	Fair	High water table; ironstone rock at a depth of about 30 to 60 inches.	(1/)
Greenville: GrA, GrB, GrC, GsA, GsB	Fair	Fair	Well drained	(1/)
Hyde: Hy	Good	Poor	High water table; flooding.	Flooding; moderately slow infiltration.
Irvington: IrA, IrB, IrC, IrC2	Fair	Fair	Moderately well drained	Low to medium available water capacity.
Johns: Jo	Fair	Fair	High water table; sand below a depth of about 40 inches.	(1/)

of the soils

two or more kinds of soil. The soils in such mapping units may have different properties and limitations, that appear in the first column of this table. Made land (Ma), Mine pits and dumps (Mp), and Swamps (Sw) for them were not made]

Soil features adversely affecting—Continued			
Farm ponds		Terraces and diversions	Waterways
Reservoir area	Embankment		
Moderately rapid to rapid permeability.	Poor resistance to piping and erosion.	Nearly level	Sandy surface layer; low available water capacity.
Moderate to moderately rapid permeability.	Poor resistance to piping and erosion	Nearly level	Sandy surface layer; medium to low available water capacity.
Moderate permeability	Sand below a depth of about 40 inches.	(1/)	Sandy surface layer.
(1/)	High compressibility under load.	Nearly level	Flooding.
(1/)	High compressibility under load.	Nearly level	Flooding.
Moderate permeability	Fair resistance to piping and erosion.	Nearly level	Flooding.
Rapid permeability	Fair to poor slope stability; moderately rapid to rapid permeability; fair to poor resistance to piping and erosion.	Nearly level	Sandy throughout; low available water capacity.
Moderate permeability	Fair resistance to piping and erosion.	Nearly level	Flooding.
Moderately slow permeability	Medium compressibility under load.	Nearly level	Flooding.
Moderately slow and slow permeability.	Medium compressibility under load.	Units Dp and DuA are nearly level, DuB susceptible to siltation.	(1/).
Moderately slow permeability	Medium compressibility under load.	Nearly level	(1/).
Moderate permeability	Medium compressibility under load.	(1/)	(1/).
Moderate permeability	Fair resistance to piping and erosion.	Susceptible to soil blowing and siltation.	Sandy surface layer; low to medium available water capacity.
Moderate permeability	(1/)	Nearly level	(1/).
Moderate permeability; ironstone rock at a depth of about 30 to 60 inches.	Ironstone rock at a depth of about 30 to 60 inches.	Nearly level	(1/).
Moderate permeability	Medium compressibility under load.	(1/)	(1/).
Moderately slow permeability	Medium compressibility under load.	Nearly level	Flooding.
Moderate to slow permeability	(1/)	(1/)	Low to medium available water capacity.
Moderate permeability	Sand below a depth of about 40 inches.	Nearly level	(1/).

TABLE 8.—*Engineering interpretations*

Soils series and map symbols	Suitability as a source of—		Soil features adversely affecting—	
	Topsoil	Road fill	Agricultural drainage	Sprinkler irrigation
Johnston: Mapped only in undifferentiated group with Wehadkee soils.	Good	Poor	High water table; organic material; flooding.	High water table; flooding.
Kalmia: Ka	Fair	Good	Well drained	(1/).
Kenansville: KeB	Poor	Good	Well drained	Low available water capacity.
Kershaw: KhD	Poor	Good (may need binder).	Excessively drained	Very low available water capacity.
Lakeland: LaB, LaD	Poor	Good	Excessively drained	Low available water capacity.
Leaf: Ls	Poor	Poor	Very slow permeability; high water table; low strength and stability; flooding.	Slow infiltration; high water table; flooding.
Lenoir: Lt	Fair	Poor	Slow permeability; high water table.	Slow infiltration
Lucy: LuB, LuC	Poor	Fair	Well drained	Low to medium available water capacity.
Lynchburg: Ly	Fair	Fair	High water table	High water table
Lynn Haven: Lz	Poor	Poor	High water table; unstable sand; organic hardpan at a depth of about 1 1/2 feet.	Low available water capacity.
McColl: Mc	Fair	Poor	High water table; flooding; ponding; slow permeability.	Slow infiltration; high water table.
Norfolk: NoA, NoB	Fair	Fair	Well drained	(1/)
Norfolk, moderately deep variant: NrA	Fair	Fair	Well drained	(1/)
Olanta: On	Fair	Fair to good.	Sand below a depth of about 40 inches.	(1/)
Orangeburg: OrA, OrB, OrC, OrD	Fair	Fair	Well drained	(1/)
Osier: Os	Poor	Poor	High water table; flooding; unstable sand.	High water table; low available water capacity.
Pantego: Pa	Fair	Poor	High water table; flooding.	High water table
Pocalla: PlB	Poor	Good	Well drained	Low to medium available water capacity.

of the soils—Continued

Soil features adversely affecting—Continued			
Farm ponds		Terraces and diversions	Waterways
Reservoir area	Embankment		
Moderately rapid to rapid permeability.	Fair to poor slope stability; moderately rapid to rapid permeability; poor resistance to piping and erosion.	Nearly level	Flooding.
Moderate permeability	Sand below a depth of 40 inches.	Nearly level	(1/).
Moderately rapid permeability	Fair to poor slope stability; moderately rapid permeability; poor resistance to piping and erosion.	Susceptible to soil blowing and siltation.	Sandy surface layer; low available water capacity.
Very rapid permeability	Poor slope stability; fair to poor resistance to piping and erosion; very rapid permeability.	Susceptible to soil blowing and siltation.	Sandy throughout; very low available water capacity.
Rapid permeability	Fair to poor slope stability; rapid permeability; fair to poor resistance to piping and erosion.	Susceptible to soil blowing and siltation.	Sandy throughout, low avail-ble water capacity.
(1/)	Fair slope stability; high compressibility under load.	Nearly level	Flooding.
(1/)	Fair slope stability; high compressibility under load.	Nearly level	(1/).
Moderate permeability	Poor resistance to piping and erosion to a depth of about 2 feet.	Susceptible to blowing and siltation.	Sandy surface layer; low to medium available water capacity.
Moderate permeability	(1/)	Nearly level	(1/)
Moderate to rapid permeability.	Fair to poor slope stability; rapid to moderate permeability; poor resistance to piping and erosion.	Nearly level	Sandy throughout; low available water capacity.
(1/)	Medium compressibility under load.	Nearly level	Flooding.
Moderate permeability	(1/)	(1/)	(1/).
Moderate permeability; ironstone rock at a depth of about 40 to 60 inches.	Ironstone rock at a depth of about 40 to 60 inches.	(1/)	(1/).
Moderate permeability	Fair slope stability; poor resistance to piping and erosion.	Nearly level	Sandy surface layer.
Moderate permeability	(1/)	(1/)	(1/).
Rapid permeability	Fair to poor slope stability; moderately rapid to rapid permeability; poor resistance to piping and erosion.	Nearly level	Sandy throughout; low available water capacity; flooding.
Moderate permeability	(1/)	Nearly level	Flooding.
Moderate to moderately rapid permeability.	Poor resistance to piping and erosion.	Susceptible to soil blowing and siltation.	Sandy surface layer; low to medium available water capacity.

TABLE 8.—*Engineering interpretations*

Soils series and map symbols	Suitability as a source of—		Soil features adversely affecting—Continued	
	Topsoil	Road fill	Agricultural drainage	Sprinkler irrigation
Ponzer: Po	Poor	Poor	Organic material; high water table.	High water table; subject to flooding.
Rains: Ra	Fair	Poor	High water table; flooding.	High water table
Rains, moderately deep variant: Rd	Fair	Poor	High water table; ironstone rock at a depth of about 30 to 60 inches; flooding.	High water table
Red Bay: ReA, ReB	Fair	Fair to good	Well drained	(1/)
Rembert: Rm	Fair	Poor	High water table; flooding; ponding; slow permeability.	Slow infiltration; high water table.
Rimini: Rs	Poor	Fair (may need binder).	Excessively drained	Very low available water capacity.
Rutlege: Ru	Poor	Poor	High water table; unstable sand; flooding.	Flooding; high water table; low available water capacity.
Sunsweet: SuC, SuE	Poor	Poor	Well drained	Slopes 6 to 25 percent; moderately slow infiltration.
Troup: TrB, TrD	Poor	Good	Well drained	Low available water capacity.
Varina: VaA, VaB	Fair	Fair	Well drained	(1/)
Vaucluse: VcB, VcC, VcD, VeC2	Fair to poor.	Fair	Well drained	Low available water capacity.
Wagram: WgB, WgC, WgD	Poor	Fair	Well drained	Low to medium available water capacity.
Wahee: Wh	Fair	Poor	Slow permeability; low strength and stability; high water table; flooding.	Moderately slow infiltration; high water table; flooding.
*Wehadkee: Wk, Wn. For interpretations of Chastain soils in mapping unit Wk and Johnston soils in mapping unit Wn, see the Chastain and Johnston series, respectively.	Good	Poor	High water table; flooding.	High water table; flooding.

1/ All features favorable.

of the soils—Continued

Soil features adversely affecting—Continued			
Farm ponds		Terraces and diversions	Waterways
Reservoir area	Embankment		
Moderate permeability below a depth of about 2 feet.	Poor slope stability and high compressibility under load to a depth of about 2 feet.	Nearly level	Organic material surface; sandy layers below the surface; flooding.
Moderate permeability	(1/)	Nearly level	Flooding.
Moderate permeability; ironstone rock at a depth of about 30 to 60 inches.	Ironstone rock at a depth of about 30 to 60 inches.	Nearly level	Flooding.
Moderate permeability	(1/)	(1/)	(1/).
Moderate to rapid permeability below a depth of about 3 feet.	Medium compressibility under load.	Nearly level	Flooding.
Very rapid permeability to a depth of about 5 feet.	Poor slope stability; very rapid permeability; fair to poor resistance to piping and erosion.	Susceptible to soil blowing and siltation.	Sandy throughout; very low available water capacity.
Rapid permeability	Fair to poor slope stability; moderately rapid permeability; poor resistance to piping and erosion.	Nearly level	Sandy throughout; low available water capacity; flooding.
Moderately slow permeability	High to medium compressibility under load.	(1/)	Cuts may expose dense clayey material; high runoff rate.
Rapid permeability to a depth of about 4 feet.	Fair to poor slope stability, rapid permeability, and fair to poor resistance to piping and erosion to a depth of about 4 feet.	Susceptible to soil blowing and siltation.	Sandy surface layer; low available water capacity.
Moderate to slow permeability	Medium compressibility under load.	(1/)	(1/).
Moderately slow to slow permeability.	(1/)	(1/)	Low available water capacity.
Moderate permeability	Poor resistance to piping and erosion to a depth of about 2 feet.	Susceptible to soil blowing and siltation.	Sandy surface layer; low to medium available water capacity.
(1/)	Fair slope stability; high compressibility under load.	Nearly level	Flooding.
Moderate permeability	Medium compressibility under load; sand below a depth of about 40 to 50 inches.	Nearly level	Flooding.

TABLE 9.—*Limitations of soils for*

[An asterisk in the first column indicates that at least one mapping unit in this series is made up of two or this reason it is necessary to follow carefully the instructions for referring to other series that appear dumps (Mp), and Swamps (Sw) were not rated. See text for definitions of ratings slight, moderate, and severe]

Soil series and map symbols	Foundations for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Barth: Ba	Moderate; wetness, fair load-supporting capacity.	Severe: high water table.	Severe: moderately rapid to rapid permeability.	Moderate: wetness; fair load-supporting capacity.
Brogdon: Br	Moderate: fair load-supporting capacity.	Slight	Moderate to severe: moderate to moderately rapid permeability.	Moderate: fair load-supporting capacity.
*Cahaba: CaA, Cb. For limitations of Leaf soils in mapping unit Cb, see the Leaf series.	Moderate: fair load-supporting capacity.	Slight	Severe: rapid permeability below a depth of 40 inches.	Moderate: fair load-supporting capacity.
Cape Fear: Ce	Severe: wetness; flooding.	Severe: slow permeability; high water table; flooding.	Moderate: surface layer high in content of organic matter.	Severe: wetness; flooding.
*Chastain: Cf, Cg, Ch. For limitations of Chewacla soils in mapping units Cg and Ch and Congaree soils in mapping unit Ch, see the Chewacla and Congaree series, respectively.	Severe: wetness; flooding.	Severe: slow permeability; high water table; flooding.	Slight when protected from flooding.	Severe: wetness; flooding.
Chewacla: Cm	Severe: wetness; flooding.	Severe: high water table; flooding.	Moderate when protected from flooding; moderate permeability.	Severe: wetness; flooding.
Chipley: Cn	Moderate: wetness	Severe: high water table; rapid permeability; pollution hazard.	Severe: rapid permeability.	Moderate: wetness
Congaree: Co	Severe: flooding	Severe: flooding	Moderate: moderate permeability.	Severe: flooding
Coxville: Cv	Severe: wetness; flooding.	Severe: high water table; flooding; moderately slow permeability.	Slight	Severe: wetness; flooding.
*Duplin:				
Dp, DuA. For limitations of Exum soils in mapping unit DuA, see the Exum series.	Moderate: wetness	Severe: moderately slow and slow permeability; high water table.	Slight	Moderate: wetness
DuB. For limitations of Exum soils in mapping unit DuB, see the Exum series.	Moderate: wetness	Severe: moderately slow and slow permeability; high water table.	Moderate: slope	Moderate: wetness
Exum: Ex	Moderate: wetness	Severe: moderately slow permeability.	Slight	Moderate: wetness

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more kinds of soil. The soils in such mapping units may have different properties and limitations, and for in the first column of this table. Because they are variable in characteristics Made land (Ma), Mine pits and

Trafficways	Recreation sites			
	Campsites	Intensive play areas	Golf fairways	Picnic areas
Moderate: wetness	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.
Slight	Moderate: sand surface layer.	Moderate to severe: sand surface layer.	Moderate: sand surface layer.	Moderate: sand surface layer.
Slight	Slight	Slight	Slight	Slight.
Severe: wetness; flooding; poor traffic-supporting capacity.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness: flooding; poor traffic-supporting capacity.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Moderate: wetness	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.	Moderate: wetness; loamy sand surface layer.
Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Moderate: fair traffic-supporting capacity; wetness.	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness.
Moderate: fair traffic-supporting capacity; wetness.	Moderate: wetness	Moderate: slope	Moderate: wetness	Moderate: wetness.
Moderate: fair traffic-supporting capacity; wetness.	Moderate: wetness	Moderate: wetness	Moderate: wetness	Moderate: wetness.

TABLE 9.—*Limitations of soils for*

Soil series and map symbols	Foundations for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Faceville:				
FaA	Slight	Slight	Moderate; moderate permeability; slope.	Slight
FaB	Slight	Slight	Moderate; moderate permeability; slope.	Slight
FaD	Moderate: slope	Moderate to severe: slope.	Severe: slope	Moderate to severe: slope.
Fuquay: FuB	Slight	Severe: slow permeability.	Severe: rapid permeability to a depth of 22 to 32 inches.	Slight
Goldsboro: Go	Moderate: wetness	Moderate to severe: high water table.	Moderate: moderate permeability.	Moderate: wetness
Goldsboro, moderately deep variant: Gp.	Moderate: wetness	Moderate to severe: high water table; ironstone rock at a depth of about 30 to 60 inches.	Moderate: moderate permeability; ironstone rock at a depth of about 30 to 60 inches.	Moderate: wetness; ironstone rock at a depth of about 30 to 60 inches.
Greenville:				
GrA, GsA	Moderate: fair load-supporting capacity; slope.	Slight	Moderate: moderate permeability; slope.	Moderate: fair load-supporting capacity; slope.
GrB, GsB	Moderate: fair load-supporting capacity; slope.	Slight	Moderate; moderate permeability; slope.	Moderate: fair load-supporting capacity; slope.
GrC	Moderate: fair load-supporting capacity; slope.	Moderate: slope	Severe: slope	Moderate: fair load-supporting capacity; slope.
Hyde: Hy	Severe: wetness; flooding.	Severe: moderately slow permeability; high water table; flooding.	Moderate: surface layer high in content of organic matter.	Severe: wetness; flooding.
Irvington:				
IrA	Slight	Severe: slow permeability.	Slight	Slight
IrB	Slight	Severe: slow permeability.	Moderate: slope	Slight
IrC, IrC2	Moderate: slope	Severe: slow permeability.	Severe: slope	Moderate: slope
Johns: Jo	Moderate: wetness; severe on areas that flood.	Moderate to severe: high water table; flooding.	Severe: rapid permeability below a depth of 40 inches.	Moderate: wetness; severe on areas that flood.

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Trafficways	Recreation sites: Campsites	Recreation sites: Intensive play areas	Recreation sites: Golf fairways	Recreation sites: Picnic Areas
Moderate: fair traffic-supporting capacity; slope.	Slight	Slight	Slight	Slight.
Moderate: fair traffic-supporting capacity; slope.	Slight	Moderate: slope	Slight	Slight.
Moderate: fair traffic-supporting capacity; slope.	Moderate: slope	Severe: slope	Moderate to severe: slope.	Moderate: slope.
Slight	Moderate: sandy surface layer.	Severe: sandy surface layer.	Moderate: sandy surface layer.	Moderate: sandy surface layer.
Moderate: wetness	Slight	Moderate: wetness	Moderate: wetness	Slight.
Moderate: wetness	Slight	Moderate: wetness	Moderate: wetness	Slight.
Moderate: fair traffic-supporting capacity; slope.	Slight	Slight	Slight	Slight.
Moderate: fair traffic-supporting capacity; slope.	Slight	Moderate: slope	Slight	Slight.
Moderate: fair traffic-supporting capacity; slope.	Moderate: slope	Severe: slope	Moderate: slope	Slight.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Moderate: fair traffic-supporting capacity.	Slight	Slight	Slight	Slight.
Moderate: fair traffic-supporting capacity.	Slight	Moderate: slope	Slight	Slight.
Moderate: fair traffic-supporting capacity.	Moderate: slope	Severe: slope	Moderate: slope	Slight.
Moderate: wetness; severe on areas that flood.	Moderate: wetness	Moderate: wetness	Moderate: wetness; severe on areas that flood.	Slight.

TABLE 9.—*Limitations of soils for*

Soil series and map symbols	Foundations for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Johnston. Mapped only in undifferentiated group with Wehadkee soils.	Severe: wetness; flooding.	Severe: high water table; flooding.	Severe: moderately rapid permeability surface layer high in content of organic matter.	Severe: wetness; flooding.
Kalmia: Ka	Moderate: fair load-supporting capacity.	Slight	Severe: rapid permeability at depths below 40 inches.	Moderate: fair load-supporting capacity.
Kenansville: KeB	Moderate: fair load-supporting capacity.	Slight	Severe: moderately rapid permeability.	Moderate: fair load-supporting capacity.
Kershaw: KhD	Moderate: unstable sand; slope.	Severe: very rapid permeability; pollution hazard; slope.	Severe: very rapid permeability.	Moderate to severe: unstable sand; slope.
Lakeland:				
LaB	Moderate: unstable sand; slope.	Moderate: rapid permeability; pollution hazard.	Severe: rapid permeability.	Moderate: unstable sand.
LaD	Moderate: unstable sand; slope.	Severe: pollution hazard; slope.	Severe: rapid permeability.	Severe: slope; unstable sand.
Leaf: Ls	Severe: wetness; flooding.	Severe: very slow permeability; high water table; flooding.	Slight	Severe: wetness; flooding.
Lenoir: Lt	Severe: wetness: flooding.	Severe: slow permeability; high water table; flooding.	Slight	Severe: wetness; flooding.
Lucy:				
LuB	Moderate: fair load-supporting capacity; slope.	Slight	Moderate: moderate permeability.	Moderate: fair load-supporting capacity.
LuC	Moderate: fair load-supporting capacity; slope.	Moderate: slope	Severe: slope	Severe: slope
Lynchburg: Ly	Severe: wetness; flooding.	Severe: high water table; flooding.	Moderate: moderate permeability.	Severe: wetness flooding.
Lynn Haven: Lz	Severe: wetness; flooding.	Severe: high water table; flooding.	Severe: moderate to rapid permeability.	Severe: wetness; flooding.
McColl: Mc	Severe: wetness; flooding.	Severe: high water table; flooding; slow permeability.	Slight	Severe: wetness; flooding.
Norfolk:				
NoA	Slight	Slight	Moderate: moderate permeability; slope.	Slight
NoB	Slight	Slight	Moderate: moderate permeability; slope.	Slight

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Trafficways	Recreation sites: Campsites	Recreation sites: Intensive play areas	Recreation sites: Golf fairways	Recreation sites: Picnic areas
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Slight	Slight	Slight	Slight	Slight.
Slight	Moderate: sand surface layer.	Severe: sand surface layer.	Moderate: sand surface layer.	Moderate: sand surface layer.
Moderate: unstable sand; slope.	Severe: loose sand	Severe: loose sand; slope.	Severe: loose sand; slope.	Severe: loose sand.
Moderate: unstable sand; slope.	Severe: loose sand	Severe: loose sand; slope.	Severe: loose sand; slope.	Severe: loose sand.
Moderate: unstable sand; slope.	Severe: loose sand	Severe: loose sand; slope.	Severe: loose sand; slope.	Severe: loose sand.
Severe: wetness; flooding; poor traffic-supporting capacity.	Severe: wetness; flooding; very slow permeability.	Severe: wetness; flooding; very slow permeability.	Severe: wetness; flooding; very slow permeability.	Severe: wetness; flooding.
Severe: poor traffic-supporting capacity; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Slight	Moderate: sandy surface layer.	Severe: sandy surface layer; slope.	Moderate: sandy surface layer.	Moderate: sandy surface layer.
Moderate: slope	Moderate: sandy surface layer.	Severe: sandy surface layer; slope.	Severe: slope; sandy surface layer.	Moderate: sandy surface layer.
Severe: flooding	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Moderate: wetness; flooding.
Severe: wetness: flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Slight	Slight	Slight	Slight	Slight.
Slight	Slight	Moderate: slope	Slight	Slight.

TABLE 9.—*Limitations of soils for*

Soil series and map symbols	Foundation for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Norfolk, moderately deep variant: NrA.	Slight	Moderate to severe: ironstone rock at a depth of about 40 to 60 inches.	Moderate: moderate permeability; ironstone rock at a depth of about 40 to 60 inches.	Moderate: ironstone rock at a depth of about 40 to 60 inches.
Olanta: On	Moderate: wetness	Moderate: high water table.	Severe: rapid permeability below a depth of about 40 inches.	Moderate: wetness
Orangeburg:				
OrA	Slight	Slight	Moderate: moderate permeability; slope.	Slight
OrB	Slight	Slight	Moderate: moderate permeability; slope.	Slight
OrC	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope
OrD	Moderate: slope	Severe: slope	Severe: slope	Severe: slope
Osier: Os	Severe: wetness; flooding.	Severe: high water table; flooding.	Severe: rapid permeability.	Severe: wetness; flooding.
Pantego: Pa	Severe: wetness; flooding.	Severe: high water table; flooding.	Moderate: moderate permeability; surface layer high in content of organic matter.	Severe: wetness; flooding.
Pocalla: PlB	Moderate: fair load-supporting capacity.	Slight	Moderate to severe: moderate to moderately rapid permeability.	Moderate: fair load-supporting capacity.
Ponzer: Po	Severe: wetness; flooding; soil is organic and unstable.	Severe: high water table; flooding.	Severe: surface layer high in content of organic matter.	Severe: wetness; flooding; soil is organic and unstable.
Rains: Ra	Severe: wetness; flooding.	Severe: high water table; flooding.	Moderate: moderate permeability.	Severe: wetness; flooding.
Rains, moderately deep variant: Rd.	Severe: wetness; flooding.	Severe: high water table; flooding; ironstone rock at a depth of about 30 to 60 inches.	Moderate: moderate permeability; ironstone rock at a depth of about 30 to 60 inches.	Severe: wetness; flooding; ironstone rock at a depth of about 30 to 60 inches.
Red Bay				
ReA	Moderate: fair load-supporting capacity.	Slight	Moderate: moderate permeability.	Moderate: fair load-supporting capacity.
ReB	Moderate: fair load-supporting capacity.	Slight	Moderate: moderate permeability.	Moderate: fair load-supporting capacity.
Rembert: Rm	Severe: wetness: flooding.	Severe: slow permeability; high water table; flooding.	Slight to moderate: moderate to rapid permeability below a depth of about 27 inches.	Severe: wetness; flooding.

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Trafficways	Recreation sites: Campsites	Recreation sites: Intensive play areas	Recreation sites: Golf fairways	Recreation sites: Picnic areas
Slight	Slight	Slight	Slight	Slight.
Moderate: wetness	Slight	Slight	Slight	Slight.
Slight	Slight	Slight	Slight	Slight.
Slight	Slight	Moderate: slope	Slight	Slight.
Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope.
Moderate: slope	Moderate: slope	Severe: slope	Severe: slope	Moderate: slope.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness flooding.
Slight	Moderate: sandy surface layer.	Severe: sandy surface layer.	Moderate: sandy surface layer.	Moderate: sandy surface layer.
Severe: wetness; flooding; poor traffic-supporting capacity.	Severe: wetness; flooding; organic surface soil.	Severe: wetness; flooding; organic surface soil.	Severe: wetness; flooding; organic surface soil.	Severe: wetness; flooding; organic surface soil.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Slight	Slight	Slight	Slight	Slight.
Slight	Slight	Moderate: slope	Slight	Slight.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.

TABLE 9.—*Limitations of soils for*

Soil series and map symbols	Foundations for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Rimini: Rs	Moderate: unstable sand.	Severe: very rapid permeability; pollution hazard.	Severe: very rapid permeability to a depth of about 60 inches.	Moderate: unstable sand.
Rutlege: Ru	Severe: wetness; flooding.	Severe: high water table; flooding.	Severe: rapid permeability.	Severe: wetness; flooding.
Sunsweet:				
SuC	Moderate: slope	Severe: moderately slow permeability; slope.	Severe: slope	Moderate: slope
SuE	Severe: slope	Severe: moderately slow permeability; slope.	Severe: slope	Severe: slope
Troup:				
TrB	Slight	Slight	Severe: rapid permeability to a depth of about 48 inches.	Slight
TrD	Moderate: slope	Moderate to severe: slope.	Severe: rapid permeability to a depth of about 48 inches.	Moderate to severe: slope.
Varina:				
VaA	Slight	Moderate: moderate to slow permeability.	Moderate: moderate to slow permeability; slope.	Slight
VaB	Slight	Moderate: moderate to slow permeability.	Moderate: moderate to slow permeability; slope.	Slight
Vaucluse:				
VcB	Slight	Severe: moderately slow to slow permeability; slope.	Moderate: slope	Slight
VcC	Moderate: slope	Severe: moderately slow to slow permeability; slope.	Severe: slope	Moderate: slope
VcD	Moderate: Slope	Severe: moderately slow to slow permeability; slope.	Severe: slope	Severe: slope
VeC2	Moderate: slope	Severe: moderately slow to slow permeability; slope.	Severe: slope	Moderate: slope
Wagram:				
WgB	Moderate: fair load-supporting capacity; slope.	Slight	Moderate: moderate permeability; slope.	Moderate: fair load-supporting capacity.
WgC	Moderate: fair load-supporting capacity; slope.	Moderate: slope	Severe: slope	Severe: slope
WgD	Moderate: fair load-supporting capacity; slope.	Severe: slope	Severe: slope	Severe: slope

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Trafficways	Recreation sites: Campsites	Recreation sites: Intensive play areas	Recreation sites: Golf fairways	Recreation sites: Picnic areas
Moderate: unstable sand.	Severe: loose sand--	Severe: loose sand--	Severe: loose sand--	Severe: loose sand.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: poor traffic-supporting capacity; slope.	Moderate: slope-----	Severe: slope------	Moderate: slope-----	Moderate: slope.
Severe: poor traffic-supporting capacity; slope.	Moderate to severe: slope.	Severe: slope------	Severe: slope-------	Moderate to severe: slope.
Slight---------------	Moderate: sandy surface layer.	Severe: sandy surface layer; slope.	Moderate: sandy surface layer.	Moderate: sandy surface layer; slope.
Moderate: slope------	Moderate: sandy surface layer.	Severe: sandy surface layer; slope.	Severe: slope; sandy surface layer.	Moderate: sandy surface layer; slope.
Moderate: fair traffic-supporting capacity.	Slight--------------	Slight------------	Slight-------------	Slight.
Moderate: fair traffic-supporting capacity.	Slight--------------	Moderate: slope---	Slight-------------	Slight.
Moderate: fair traffic-supporting capacity; slope.	Moderate: loamy sand surface layer; slope.	Moderate: slope---	Slight-------------	Moderate: loamy sand surface layer; slope.
Moderate: fair traffic-supporting capacity; slope.	Moderate: loamy sand surface layer; slope.	Severe: slope-----	Moderate: slope----	Moderate: loamy sand surface layer; slope.
Moderate: fair traffic-supporting capacity; slope.	Moderate: loamy sand surface layer; slope.	Severe: slope-----	Severe: slope------	Moderate: loamy sand surface layer; slope.
Moderate: fair traffic-supporting capacity; slope.	Slight--------------	Severe: slope-----	Moderate: slope----	Slight.
Slight--------------	Moderate: sandy surface layer; slope.	Severe: sandy surface layer; slope.	Moderate: sandy surface layer.	Moderate: sandy surface layer; slope.
Moderate: slope-----	Moderate: sandy surface layer; slope.	Severe: sandy surface layer; slope.	Severe: sandy surface layer.	Moderate: sandy surface layer; slope.
Moderate: slope-----	Moderate: sandy surface layer; slope.	Severe: sandy surface layer; slope.	Severe: sandy surface layer slope.	Moderate: sandy surface layer; slope.

TABLE 9.—*Limitations of soils for*

Soil series and map symbols	Foundations for low buildings	Septic tank filter fields	Sewage lagoons	Sites for light industries
Wahee: Wh	Severe: wetness; flooding.	Severe: slow permeability; flooding; high water table.	Slight	Severe: wetness; flooding.
*Wehadkee: Wk, Wn. For limitations of Chastain soils in mapping unit Wk and Johnston soils in mapping unit Wn, see the Chastain and Johnston series, respectively.	Severe: wetness; flooding.	Severe: high water table; flooding.	Moderate when protected from flooding; moderate permeability.	Severe: wetness; flooding.

noted that extremely rapid permeability in some sands results in inadequate filtration and a risk of contamination of nearby water supplies, lakes, or streams.

In the construction of sewage lagoons, properties of the soil are significant if they affect the pond floor or the embankment. These properties include permeability, slope, unified classification, content of organic material, and depth to bedrock if applicable. Because the soils of this survey area do not have a coarse fragment, this property was not considered.

Sites for light industries are those for buildings of three stories or less. Public or community facilities for sewage disposal are assumed to be available. The factors considered in rating the limitations for these sites are wetness, flooding, relative load-supporting capacity based on unified classification, shrink-swell potential, slope, and depth to bedrock where applicable. Ratings are for undisturbed soil that is used to support foundations for light industrial buildings.

Figure 12.—Flooded homesites on Coxville fine sandy loam.

Trafficways are considered as streets in residential areas as well as roads and highways. Soils are rated as having slight limitations or no limitation where construction requires only small cuts or fill and little preparation of subgrade. Factors used in rating the limitations are traffic-supporting capacity, shrink-swell potential (indicated by the AASHO and Unified classifications), wetness, flooding hazard, slope, and depth to rock.

Campsites are areas to be used intensively for tents and small camp trailers and the accompanying activities of outdoor living. Intensive play areas are those areas used for organized games, such as baseball, football, and badminton. Golf fairways are the areas on golf courses used for golfing and associated play areas. Picnic areas consist of land used for park-type picnics.

The chief factors that limit the use of soils for recreational sites are wetness, flooding hazard, permeability, slope, and surface texture.

Formation and Classification of the Soils

This section tells how the factors of soil formation affected the development of soils in Florence and Sumter Counties. It tells how and why soils are classified. The current system of soil classification is explained, and each soil series in the survey area is classified according to this system.

Factors of Soil Formation

Soil is the product of soil-forming processes that act on accumulated or deposited geologic materials. The five important factors in soil formation are parent material, climate, living organisms (plants and animals), relief, and time.

Climate and living organisms are the active forces of soil formation. Their effect on the parent material is modified by relief and by the length of time the parent material has been in place. The relative importance of each factor differs from place to place. In some places one factor dominates in the formation and fixes most of the properties of the soil. In

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Trafficways	Recreation sites: Campsites	Recreation sites: Intensive play areas	Recreation sites: Golf fairways	Recreation sites: Picnic areas
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.
Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.	Severe: wetness; flooding.

most areas, however, the interaction of all five factors determines what kind of soil is formed.

Although soil formation is complex, some understanding of the soil-forming processes may be gained by considering each of the five factors separately. It must be remembered, however, that each of the five factors is affected by each of the other factors.

Parent material

Parent material is the unconsolidated mass from which a soil is formed. It has much to do with the mineral and chemical composition of the soil. In Florence and Sumter Counties the parent materials of the soils are marine or fluvial deposits. These deposits consist of varying amounts of sands, silts, and clays.

There are seven formations and terraces in these two counties that were deposited and formed during the Pleistocene or glacial epoch: the Brandywine, the Coharie, the Sunderland, the Wicomico, the Penholoway, the Talbot, and the Pamlico. The Brandywine terrace is from about 215 feet to 270 feet above sea level. Parts of the Sandhills section of Sumter County and parts of the area of adjoining high, red soils in the vicinity of Shaw Air Force Base are on the Brandywine terrace. Some elevations in these areas are a little more than 400 feet above sea level. (Elevations above 270 feet are outcroppings of the Tuscaloosa Formation of Upper Cretaceous age, and the Black Mingo Formation of Eocene age). Lucy, Orangeburg, Troup, Vaucluse, and Wagram are the dominant soils that formed in this material.

The Coharie terrace ranges from about 170 feet to 215 feet above sea level and occurs in Sumter County mainly north and west of the city of Sumter; a smaller area is just west of Rembert. Faceville, Lenoir, Norfolk, Orangeburg, and Rutlege are the dominant soils that formed in this material.

The Sunderland terrace ranges from about 100 feet to 170 feet above sea level. It makes up most of the remainder of Sumter County and the northern portion of Florence County. Coxville, Goldsboro, Lakeland, Lynchburg, Norfolk, Pocalla, Ponzer, Rains, Rutlege, and Wagram are the dominant soils that formed in this material.

The Wicomico terrace ranges from about 70 feet to 100 feet above sea level. An area just east and south of Mars Bluff and most of the southern half of Florence County is on this terrace. In Sumter County the Wicomico terrace extends part way up the flood plains of the rivers of the county. Chastain and Chewacla are the dominant soils on flood plains, and Coxville, Goldsboro, Lynchburg, and Norfolk are the dominant soils that formed in other parts of this material.

The Penholoway terrace ranges from about 42 feet to 70 feet above sea level. It makes up a small part of the extreme southern part of Florence County east of Lake City and also most of the stream terraces of the county. In most of this area, Cahaba, Coxville, Goldsboro, Johns, Leaf, and Lynchburg soils are dominant, but Chastain and Chewacla soils are dominant on the flood plains.

The Talbot terrace ranges from 25 feet to 42 feet above sea level. Most of the flood plains of the Great Pee Dee River in Florence County is on this terrace. The Pamlico terrace has a shore line at less than 25 feet above sea level. It makes up the flood plains along the lower reaches of Lynches River and the Great Pee Dee River in Florence County. Soils of the Chastain and Chewacla series are the dominant soils that formed in the materials of both of these terraces.

Alluvial materials consisting of sand, gravel, silt, and clay have been deposited in the valleys of all the major streams and in the valleys of some of their tributaries. These recent deposits show little evidence of soil development.

Climate

The climate of Florence and Sumter Counties is important in the formation of soils. The counties have a temperate climate, and rainfall is well distributed throughout the year. Temperature and precipitation are discussed in a subsection on climate in the section "Additional Facts About Florence and Sumter Counties." Because the climate is fairly uniform over the two counties, it has had a tendency to equalize the soils.

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and or-

ganic material through the soil profile. Large amounts of rainwater promote leaching of the soluble bases and the translocation of the less soluble and fine-textured soil material downward through the soil profile. The amount of water that percolates through the soil depends on the amount of rainfall, the length of frost-free season, relief, and the permeability of the soil material.

Weathering of the parent materials is speeded by moist conditions and warm temperatures. The growth and activity of living organisms is increased by a warm humid climate.

The high rainfall, warm temperature, and long freeze-free growing season of Florence and Sumter Counties have had a marked effect on the soils directly and on some of the other factors that affect the soils.

Living organisms

The number and kinds of plants and animals that live in and on the soil are determined mainly by the climate. To a lesser extent parent material, relief, and age of the soil also are factors.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposing of organic matter. Larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface soil.

Most of the fungi, bacteria, and other micro-organisms in the soils of Florence and Sumter Counties are in the upper few inches of soil. The activity of earthworms and other small invertebrates is chiefly in the A horizon and upper part of the B horizon where these organisms slowly but continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use.

Animals play a secondary role in soil formation, but their influence is very great. By eating plants they perform one step in returning plant material to the soil.

In Florence and Sumter Counties the native vegetation in the better drained areas was mainly oak, hickory, longleaf pine, and loblolly pine. On the wetter areas it was mainly yellow-poplar, sweetgum, ash, cypress, maple, tupelo, and blackgum. Large trees affect soil formation by bringing nutrients up from deep in the soil, by bringing soil material up from varying depths when the trees are blown over, and by providing large openings to be filled by materials from above as large roots decay.

Relief

Relief, or lay of the land, influences soil formation because it affects moisture, temperature, and erosion. Because of this, several different kinds of soil may form from similar parent material. Most of Florence and Sumter Counties is a nearly level to gently sloping plain. Four general landscapes, however, affect the formation of the soils. These landscapes are described as follows:

The Sandhills, which have a rolling topography and are deeply dissected by streams. In this area the soils on the ridges have a sandy surface layer several feet thick, but those on the slopes adjacent to the streams have a fragipan or plinthite within a depth of 30 to 40 inches.

Nearly level to sloping, moderately dissected areas below the Sandhills. In this area the soils mostly are well drained and deep.

Broad, slightly dissected, nearly level areas between streams. Most of the soils have a yellow to gray color, and many are distinctly mottled. They are deep and moderately well drained to poorly drained.

Areas on valley floors and on stream bottoms and low terraces. The soils in these areas are young, are predominantly gray (gleyed), and have poorly defined genetic layers.

Time

The length of time required for a soil to develop depends largely on the intensity of other soil-forming factors. The soils of Florence and Sumter Counties range from immature, or young, to mature. On the higher elevations of the uplands, most of the soils have a well-developed horizon that is easily recognized. Where the parent materials are very sandy, little horizonation has taken place, and where the relief is very low and the soils are permanently saturated, horizons are only moderately distinct. On the first bottoms of the streams, the soil material has not been in place long enough for soil horizons to form.

Classification of Soils

Soils are classified so that we can more easily remember their significant characteristics. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their response to manipulation. First through classification and then through use of soil maps, we can apply our knowledge of soils to specific fields and other tracts of land.

Thus in classification, soils are placed in narrow categories that are used in detailed soil surveys so that knowledge about the soils can be organized and used in managing farms, fields, and woodland; in developing rural areas; in engineering work; and in many other ways. Soils are placed in broad classes to facilitate study and comparison in large areas, such as countries and continents.

Two systems of classifying soils have been used in the United States in recent years. The older system was adopted in 1938 (*2*) and later revised (*7*). The system currently used was adopted for general use by the National Cooperative Soil Survey in 1965. It is under continual study (*6, 9*). Therefore, readers interested in developments of the current system should refer to the latest literature available. In table 10 the soil series of Florence and Sumter Counties are placed in some categories of the current system.

Ten soil orders are recognized in the current system. They are Entisols, Vertisols, Inceptisols, Aridisols, Mollisols, Spodosols, Alfisols, Ultisols, Oxisols, and Histosols. The properties used to differentiate the soil orders are those that tend to give broad climatic groupings of the soils. Three exceptions are the Inceptisols, Entisols, and Histosols which are in many different climates. Because of the importance of climate to soil formation, the orders to some extent are climatic zonal groups, and they tend to have definite geographic ranges. The five soil orders in Florence and Sumter Counties are Entisols, Inceptisols, Spodosols, Ultisols, and Histosols.

Entisols are recent mineral soils that do not have genetic horizons or have only the beginning of such horizons. *Inceptisols* are soils on young, but not recent, land surfaces. *Spodosols* have horizons in which organic colloids, iron, and aluminum compounds, or both, have accumulated. *Ultisols* have distinct horizons, are commonly on old land surfaces, and contain a clay-enriched B horizon that has low base saturation. *Histosols* are organic soils.

TABLE 10.—*Soil series classified according to the current system of classification*

Series	Current classification		
	Family	Subgroup	Order
Barth[1/]	Sandy, siliceous, thermic	Aquic Psammentic Paleudults	Ultisols.
Brogdon	Coarse-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Cahaba	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Cape Fear	Clayey, mixed (kaolinitic), thermic	Typic Umbraquults	Ultisols.
Chastain	Fine, kaolinitic, acid, thermic	Typic Haplaquepts	Inceptisols.
Chewacla	Fine-loamy, mixed, thermic	Aquic Fluventic Dystrochrepts	Inceptisols.
Chipley[2/]	Siliceous, thermic, coated	Aquic Quartzipsamments	Entisols.
Congaree	Fine-loamy, mixed, nonacid, thermic	Typic Udifluvents	Entisols.
Coxville	Clayey, kaolinitic, thermic	Typic Paleaquults	Ultisols.
Duplin[3/]	Clayey, kaolinitic, thermic	Aquic Paleudults	Ultisols.
Exum[4/]	Fine-silty, siliceous, thermic	Aquic Paleudults	Ultisols.
Faceville	Clayey, kaolinitic, thermic	Typic Paleudults	Ultisols.
Fuquay	Loamy, siliceous, thermic	Arenic Plinthic Paleudults	Ultisols.
Goldsboro	Fine-loamy, siliceous, thermic	Aquic Paleudults	Ultisols.
Goldsboro, moderately deep variant.	Fine-loamy, siliceous, thermic	Aquic Hapludults	Ultisols.
Greenville	Clayey, kaolinitic, thermic	Rhodic Paleudults	Ultisols.
Hyde	Fine-loamy, mixed (siliceous), thermic	Umbric Paleaquults	Ultisols.
Irvington	Fine-loamy, siliceous, thermic	Plinthic Fragiudults	Ultisols.
Johns	Fine-loamy, siliceous, thermic	Aquic Hapludults	Ultisols.
Johnston	Coarse-loamy, siliceous, acid, thermic	Cumulic Humaquepts	Inceptisols.
Kalmia[5/]	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Kenansville	Loamy, siliceous, thermic	Arenic Hapludults	Ultisols.
Kershaw	Siliceous, thermic, uncoated	Typic Quartzipsamments	Entisols.
Lakeland	Siliceous, thermic, coated	Typic Quartzipsamments	Entisols.
Leaf	Clayey, mixed, thermic	Typic Albaquults	Ultisols.
Lenoir	Clayey, mixed, thermic	Aeric Paleaquults	Ultisols.
Lucy	Loamy, siliceous, thermic	Arenic Paleudults	Ultisols.
Lynchburg	Fine-loamy, siliceous, thermic	Aeric Paleaquults	Ultisols.
Lynn Haven	Sandy, siliceous, thermic	Typic Haplaquods	Spodosols.
McColl	Clayey, kaolinitic, thermic	Typic Fragiaquults	Ultisols.
Norfolk	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Norfolk, moderately deep variant.	Fine-loamy, siliceous, thermic	Typic Hapludults	Ultisols.
Olanta	Coarse-loamy, siliceous, thermic	Humic Hapludults	Ultisols.
Orangeburg	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.

TABLE 10.—*Soil series classified according to the current system of classification*—Continued

Series	Current classification: Family	Subgroup	Order
Osier	Siliceous, thermic	Typic Psammaquents	Entisols.
Pantego	Fine-loamy, siliceous, thermic	Umbric Paleaquults	Ultisols.
Pocalla	Sandy, siliceous, thermic	Arenic Paleudults	Ultisols.
Ponzer	Loamy, mixed, dysic, thermic	Terric Medisaprists	Histosols.
Rains	Fine-loamy, siliceous, thermic	Typic Paleaquults	Ultisols.
Rains, moderately deep variant.	Fine-loamy, siliceous, thermic	Typic Ochraquults	Ultisols.
Red Bay	Fine-loamy, siliceous, thermic	Rhodic Paleudults	Ultisols.
Rembert	Clayey, kaolinitic, thermic	Typic Ochraquults	Ultisols.
Rimini	Sandy, siliceous, thermic	Entic Haplohumods	Spodosols.
Rutlege[6/]	Sandy, siliceous, thermic	Typic Humaquepts	Inceptisols.
Sunsweet	Clayey, kaolinitic, thermic	Plinthic Paleudults	Ultisols.
Troup	Loamy, siliceous, thermic	Grossarenic Paleudults	Ultisols.
Varina	Clayey, kaolinitc, thermic	Plinthic Paleudults	Ultisols.
Vaucluse	Fine-loamy, siliceous, thermic	Typic Fragiudults	Ultisols.
Wagram	Loamy, siliceous, thermic	Arenic Paleudults	Ultisols.
Wahee	Clayey, kaolinitic, thermic	Aeric Ochraquults	Ultisols.
Wehadkee	Fine-loamy, mixed, nonacid, thermic	Typic Fluvaquents	Entisols.

1/ These soils are taxadjuncts to the Barth series because the argillic horizons do not extend below a depth of 45 inches.

2/ These soils are taxadjuncts to the Chipley series because they have slightly more silt and clay than the defined range for the series.

3/ Some of these soils are taxadjuncts to the Duplin series because clay content decreases by more than 20 percent within 60 inches.

4/ These soils are taxadjuncts to the Exum series because they have slightly more sand coarser than very fine sand in the upper 20 inches of the argillic horizon than that defined for the series.

5/ These soils are taxadjuncts to the Kalmia series because clay content in the upper part of the argillic horizon is slightly less than that defined for the series.

6/ These soils are taxadjuncts to the Rutlege series because many of these soils have incipient Bh horizons within a depth of 50 inches.

Each of the soil orders is divided into suborders. Soils within a suborder are similar in soil properties that mainly reflect either the presence or absence of waterlogging or soil differences resulting from climate or vegetation. In Florence and Sumter Counties, soils dominated by characteristics associated with wetness form a suborder in each of the orders except Histosols. Soils that are generally moist form a suborder in Ultisols; soils that are dominated by sandy materials constitute a suborder of Entisols; soils that have a light-colored surface layer form a suborder of Inceptisols; soils that have dispersed organic matter and aluminum and that lack significant iron content in the spodic horizon form a suborder of Spodosols; and soils with decomposed organic horizons constitute a suborder in the Histosols. The suborder is not shown in table 10.

Suborders are separated into great groups on the basis of uniformity in the presence, absence, and arrangement of diagnostic horizons and features. The diagnostic horizons are those that contain illuvial clay, iron, and humus; or they are thick, dark-colored surface horizons; or they have horizons which have a pan that interferes with water movement and root development. The name of the great group is not shown separately in table 10. It is the last word in the name of the subgroup.

The subgroups are subdivisions of a great group and are defined in terms of reference to the great groups. One of the subgroups represents the central, or typic, concept of the great group. Others have properties of one great group that are dominant and also properties of another great group, suborder, or order that are strongly enough expressed to be significant. Subgroups may also be separated because of some soil property that is unlike that of any great group, suborder, or order but which requires recognition. The names of subgroups are derived by placing one or more adjectives before the name of the great group.

Families are separated within a subgroup primarily on the basis of properties important to the growth of plants or to the behavior of soils when they are used for engineering. The properties most commonly used for family differentiae are texture, soil mineralogy, and soil temperature. For some categories, soil reaction, permeability, depth of soil, soil consistence, moisture equivalent, and slope or shape of the soil may also be used for family separations.

Additional Facts About Florence and Sumter Counties

The climate, physiography, drainage, and geology of Florence and Sumter Counties are discussed in this section.

Climate[7]

The climate of Florence and Sumter Counties is mild and temperate, and rainfall is well distributed throughout the year. The day-to-day weather is controlled largely by the movement of pressure systems across the nation. During the summer, however, there are relatively few complete exchanges of air masses because tropical maritime air per-

[7] By HOLBROOK LANDERS, climatologist for South Carolina, National Weather Service, U.S. Department of Commerce.

TABLE 11.—*Temperature and precipitation, Florence County, South Carolina*

Month	Temperature				Precipitation				
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—		Days with snow cover of 1.0 inch or more	Average depth of snow on days with snow cover
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—		
	°F.	°F.	°F.	°F.	Inches	Inches	Inches	Number	Inches
January	58	37	76	22	2.6	1.2	4.4	(1/)	0.1
February	60	37	75	25	3.2	1.3	5.8	(1/)	.2
March	67	43	80	29	3.6	1.7	5.8	(1/)	.4
April	76	51	87	40	3.6	1.7	6.0	----	0
May	84	60	92	50	2.9	1.2	4.8	----	0
June	90	68	97	59	4.3	2.3	6.5	----	0
July	91	70	97	63	6.2	3.4	9.7	----	0
August	90	70	97	62	4.6	2.5	6.9	----	0
September	85	64	93	53	4.1	1.5	7.3	----	0
October	77	53	86	41	2.2	.4	4.5	----	0
November	67	43	79	29	2.3	.6	4.3	----	(2/)
December	58	36	74	23	3.1	1.2	5.4	(1/)	.3
Year	75	53	3/101	4/17	42.3	32.8	52.6	1	1.0

1/ Less than 0.5 day.
2/ Trace.
3/ Average annual highest temperature.
4/ Average annual lowest temperature.

sists for extended periods. Wind, humidity, and sunshine records are not available from Sumter County, but the data for Florence County should be quite representative for both counties. Florence County data indicate that the prevailing winds are from the southwest during the spring and summer months, becoming northerly late in summer and continuing through the middle of winter. The average wind speed is about 8 miles per hour; the strongest 1-minute wind speed in recent years was 35 miles per hour.

Data on climate, as recorded by the U.S. National Weather Service, are summarized in tables 11, 12, 13, and 14.

The latest averages for relative humidity measured at 1 p.m. are 50 percent in winter, 46 percent in spring, 55 percent in summer, and 51 percent in autumn. Corresponding values measured at 7 a.m. are 81 percent, 79 percent, 87 percent, and 87 percent. During the average year in Florence and Sumter Counties, there are 74 days on which rainfall exceeds 0.10 inch. More than a half inch falls on 30 days. The greatest annual rainfall for this general area during the last 35 years was 70.69 inches observed at Sumter in 1959. The least annual rainfall, 27.11 inches, was recorded at Sumter in 1933. Florence extremes were 64.71 inches in 1959 and 27.50 inches in 1954. Normal annual rainfall amounts for Sumter and Florence are 42.4 and 42.7 inches, respectively.

During the year, the sun is visible during an average of 65 percent of the daylight hours; percentages range from the low fifties during the winter months to the low seventies during the summer months. The skies are cloudy to overcast about 37 percent of the time. About 4 percent of the time, the cloud bases were at heights below 500 feet, and 9 percent of the time they were below 1,000 feet.

Summers are very warm. Temperature is 90 degrees or higher an average of 73 days annually. As an average, the temperature reaches 100 degrees on 3 days. Thirty-six percent of the annual rainfall occurs in summer mostly as scattered showers and thunderstorms.

Autumn is warm and dry. Only 20 percent of the annual rainfall occurs in that season. The growing season is more than 7 months long. The average date of the first frost is about November 8.

Winters are relatively mild. Freezing temperatures occur on fewer than half the winter days. Temperatures as low as 20 degrees occur on 5 days; temperature as low as 15 degrees is reached only on 2 days. Winter is a relatively dry season. Snow flurries are observed occasionally, but significant amounts of snow are uncommon.

TABLE 12.—*Temperature and precipitation, Sumter County, South Carolina*

Month	Temperature				Precipitation				
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—		Days with snow cover of 1.0 inch or more	Average depth of snow on days with snow cover
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—		
	°F.	°F.	°F.	°F.	Inches	Inches	Inches	Number	Inches
January	60	37	76	21	2.7	1.2	4.5	(1/)	0.1
February	62	38	77	24	3.4	1.4	6.3	(1/)	.2
March	69	44	83	28	3.9	1.8	6.2	(1/)	.3
April	78	51	88	39	3.7	1.7	6.1	----	0
May	85	60	93	49	3.3	1.3	5.5	----	0
June	91	67	98	58	4.2	2.3	6.4	----	0
July	92	70	98	64	5.6	3.0	8.7	----	0
August	91	69	97	62	5.3	2.8	8.0	----	0
September	86	64	94	54	4.4	1.6	7.8	----	0
October	78	52	86	39	2.4	.5	5.0	----	0
November	68	42	80	28	2.3	.6	4.2	----	(2/)
December	59	36	76	23	3.3	1.3	5.7	(1/)	.4
Year	77	52	3/101	4/16	44.5	34.8	54.1	1	1.0

1/ Less than 0.5 day.

2/ Trace.

3/ Average annual highest temperature

4/ Average annual lowest temperature.

Spring is a changeable, transitional season that begins rather cold and ends very warm. It is a relatively dry season. Twenty-three percent of the annual rainfall occurs in spring. The average date of the last freezing temperature is about March 24.

Severe weather can occur as tornado activity in spring and as tropical storms and hurricanes late in summer and early in autumn. Florence County has had 13 tornadoes in 55 years; Sumter County has had 8. Heavy rains and high winds occur with tropical storms in about 1 of every 6 years. Storms of hurricane intensity are much less frequent. In modern history there have been two severe droughts, in 1925 and 1954. Less severe dry periods occur more often, generally late in spring or in autumn.

TABLE 13.—*Probabilities of last freezing temperatures in spring and first in fall, Florence County, South Carolina*

Probability	Dates for given probability and temperature		
	24° F. or less	28° F. or less	32° F. or less
Spring:			
1 year in 10 later than	March 12	March 23	April 9
2 years in 10 later than	March 5	March 16	April 2
5 years in 10 later than	February 18	March 2	March 19
Fall:			
1 year in 10 earlier than	November 19	November 8	October 27
2 years in 10 earlier than	November 25	November 14	November 1
5 years in 10 earlier than	December 5	November 24	November 11

TABLE 14.—*Probabilities of last freezing temperatures in spring and first in fall, Sumter County, South Carolina*

Probability	Dates for given probability and temperature		
	24° F. or less	28° F. or less	32° F. or less
Spring:			
1 year in 10 later than	March 17	April 1	April 17
2 years in 10 later than	March 10	March 26	April 10
5 years in 10 later than	February 24	March 12	March 27
Fall:			
1 Year in 10 earlier than	November 17	November 3	October 22
2 years in 10 earlier than	November 22	November 8	October 27
5 years in 10 earlier than	December 2	November 18	November 6

Physiography, Drainage, and Geology

Florence and Sumter Counties are made up of three broad physiographic areas. These areas are the Sandhills, the Southern Coastal Plain, and the Atlantic Coast Flatwoods. The soils of all three areas are sedimentary and were transported from other areas by the ocean or streams and deposited in their present position.

The Sandhills area is in the western and northwestern parts of Sumter County. This area is nearly level to rolling and hilly and is dissected by many narrow valleys and drainageways.

The northern half of Florence County and the area in Sumter County from the Sandhills to the Black River are in the Southern Coastal Plain area. In these areas the land is predominantly nearly level to gently sloping; steeper slopes are adjacent to the streams and drainageways. Drainage generally is good. However, there are many scattered, small to moderately large depressions, commonly known as Carolina Bays, that lack natural surface outlets. These depressions are more numerous in Sumter County.

The Atlantic Coast Flatwoods area covers the eastern panhandle section of Sumter County and the southern half of Florence County. The soils in these areas are predominantly nearly level and moderately well drained to poorly drained. In places are large, flat areas of poorly drained to somewhat poorly drained soils. Broad areas of nearly level flood plains and, in places, low terraces occur along the major streams of the two counties.

Elevation in Florence County ranges from a high of about 150 feet above sea level in the Florence-Timmonsville area to a low of about 20 feet above sea level in parts of the flood plains of the Great Pee Dee River and Lynches River. Most of the county has an elevation between 70 and 150 feet above sea level. In Sumter County the Sandhills and the adjacent ridge of high red soils are at top elevations in the county of slightly more than 400 feet above sea level. The southern part of the flood plains of the Wateree River has the lowest elevation, or about 80 feet above sea level. The greater part of Sumter County has an elevation between 110 and 270 feet above sea level.

The Wateree River forms the western boundary of Sumter County, and the Great Pee Dee River the eastern boundary of Florence County. Lynches River forms the boundary between parts of Sumter and Florence Counties and flows in a southeastern direction across Florence County to the Great Pee Dee River. Other principal areas of water in Sumter County are the Black River, Pocotaligo River, Rafting Creek, Rocky Bluff Swamp, Scape Ore Creek, Pudding Swamp, and Douglas Swamp. Other principal areas of water in Florence County are Black Creek, Jeffries Creek, Sparrow Swamp, Lake Swamp, Big Swamp, and Lynches Lake. These rivers and streams and their tributaries generally flow in a southeasterly direction and form somewhat of a dendritic pattern.

The geology of Florence and Sumter Counties is characteristic of the Atlantic Coastal Plain. There are six geologic formations in the two counties. They were deposited at different periods during alternating transgression and recession of the ocean (*3*). The formations are the Tuscaloosa Formation of the Upper Cretaceous Age, outcropping in the Sandhills section of Sumter County; the Black Mingo Formation of the Lower Eocene Age, at or near the surface in the eastern two-thirds of Sumter County; the Duplin Marl Formation of the Upper Miocene Age, underlying parts of

the eastern third of Sumter County and the southern and western parts of Florence County; the Black Creek Formation of the Upper Cretaceous Age, which crops out in the northern part of Florence County; the Pee Dee Formation of the Upper Cretaceous Age, whose area of outcrop extends across the southern half of Florence County; and seven Pleistocene formations in relatively thin deposits over all of Florence County and most of Sumter County, up to an elevation of 270 feet above sea level. These Pleistocene deposits underlie seven different terraces in Florence and Sumter Counties. They are the Brandywine terrace that has an elevation of 215 to 270 feet above sea level; the Coharie terrace, 170 to 215 feet; the Sunderland terrace, 100 to 170 feet; the Wicomico terrace, 70 to 100 feet; the Penholoway terrace, 42 to 70 feet; the Talbot terrace, 25 to 42 feet; and the Pamlico terrace that has an elevation of less than 25 feet.

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Glossary

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Argillic horizon. A subsurface horizon into which clay has moved. It has about 20 percent more clay than the horizon above. The presence of clay films on ped surfaces and in soil pores is evidence of clay movement.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount of wilting point. It is commonly expressed as inches of water per inch of soil.

Bisequel. See Sequum.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Drainage class (natural). Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low available water capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and the C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and some soils commonly have mottling at a depth below 6 to 16 inches.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Erosion. The wearing away of the land surface by wind (sandblast), running water, and other geological agents.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material in one or more horizons to be neutral gray in color. The term "gleyed" is applied to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination

of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

*R layer.*Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Leaching. The removal of soluble materials from soils or other material by percolating water.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical mineralogical, and biological properties of the various horizons, and their thickness and arrangement in the soil profile.

Mottling, soil. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the production of food and tissue. Nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps other elements obtained from the soil and carbon, hydrogen, and oxygen obtained largely from the air and water, are plant nutrients.

Parent material. Disintegrated and partly weathered rock from which soil has formed.

Ped. An individual natural soil aggregate, such as a crumb, a prism, or a block, in contrast to a clod.

Permeability. The quality that enables the soil to transmit water or air. Terms used to describe permeability are as follows: *very slow, slow, moderately slow, moderate, moderately rapid, rapid, and very rapid.*

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents that commonly shows as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to hardpan or to irregular aggregates upon repeated wetting and drying, or it is the hardened relicts of the soft, red mottles. It is a form of laterite.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		pH
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Sand. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 84 percent or more sand and not more than 10 percent clay.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. If two sequa are present in a single soil profile, it is said to have a bisequum.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Soil. A natural, three-dimensional body on the earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting on earthy parent material as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Spodic horizon. A subsurface horizon in which amorphous materials consisting of organic matter plus compounds of aluminum and usually iron have accumulated.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Taxadjunct. Soils that are unclassified at the series level but allowed to go under the name of a defined series. They are so like the soils of the defined series in morphology, composition, and behavior that little or nothing is gained by adding a new series.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

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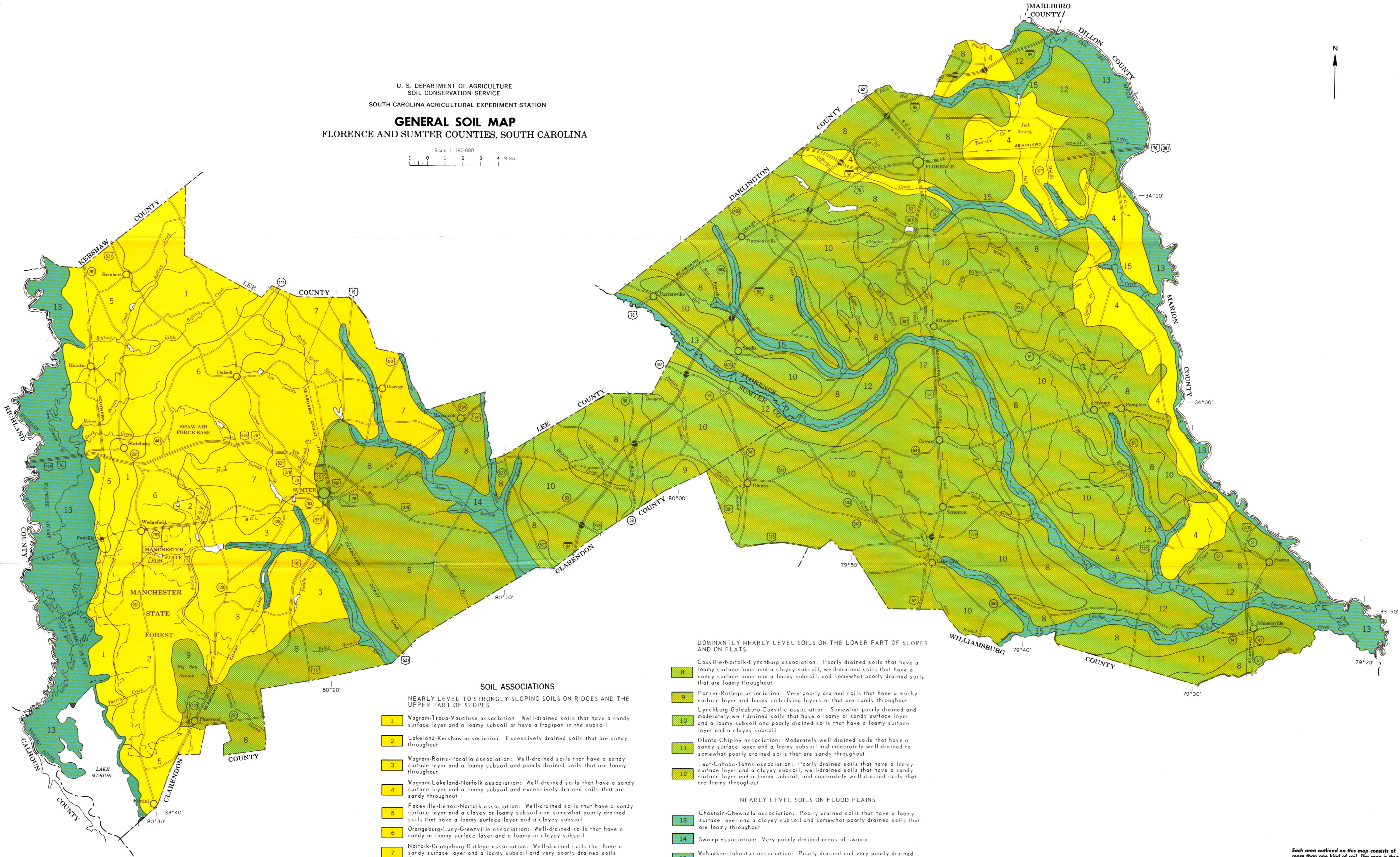
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA

Scale 1:190,080



SOIL ASSOCIATIONS

NEARLY LEVEL TO STRONGLY SLOPING SOILS ON RIDGES AND THE UPPER PART OF SLOPES

1 Wagram-Troup-Vaucluse association: Well-drained soils that have a sandy surface layer and a loamy subsoil or have a fragipan in the subsoil

2 Lakeland-Kershaw association: Excessively drained soils that are sandy throughout

3 Wagram-Rains-Pocalla association: Well-drained soils that have a sandy surface layer and a loamy subsoil and poorly drained soils that are loamy throughout

4 Wagram-Lakeland-Norfolk association: Well-drained soils that have a sandy surface layer and a loamy subsoil and excessively drained soils that are sandy throughout

5 Faceville-Lenoir-Norfolk association: Well-drained soils that have a sandy surface layer and a clayey or loamy subsoil and somewhat poorly drained soils that have a loamy surface layer and a clayey subsoil

6 Orangeburg-Lucy-Greenville association: Well-drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil

7 Norfolk-Orangeburg-Rutlege association: Well-drained soils that have a sandy surface layer and a loamy subsoil and very poorly drained soils that are sandy throughout

DOMINANTLY NEARLY LEVEL SOILS ON THE LOWER PART OF SLOPES AND ON FLATS

8 Coxville-Norfolk-Lynchburg association: Poorly drained soils that have a loamy surface layer and a clayey subsoil, well-drained soils that have a sandy surface layer and a loamy subsoil, and somewhat poorly drained soils that are loamy throughout

9 Ponzer-Rutlege association: Very poorly drained soils that have a mucky surface layer and loamy underlying layers or that are sandy throughout

10 Lynchburg-Goldsboro-Coxville association: Somewhat poorly drained and moderately well drained soils that have a loamy or sandy surface layer and a loamy subsoil and poorly drained soils that have a loamy surface layer and a clayey subsoil

11 Olanta-Chipley association: Moderately well drained soils that have a sandy surface layer and a loamy subsoil and moderately well drained to somewhat poorly drained soils that are sandy throughout

12 Leaf-Cahaba-Johns association: Poorly drained soils that have a loamy surface layer and a clayey subsoil, well-drained soils that have a sandy surface layer and a loamy subsoil, and moderately well drained soils that are loamy throughout

NEARLY LEVEL SOILS ON FLOOD PLAINS

13 Chastain-Chewacla association: Poorly drained soils that have a loamy surface layer and a clayey subsoil and somewhat poorly drained soils that are loamy throughout

14 Swamp association: Very poorly drained areas of swamp

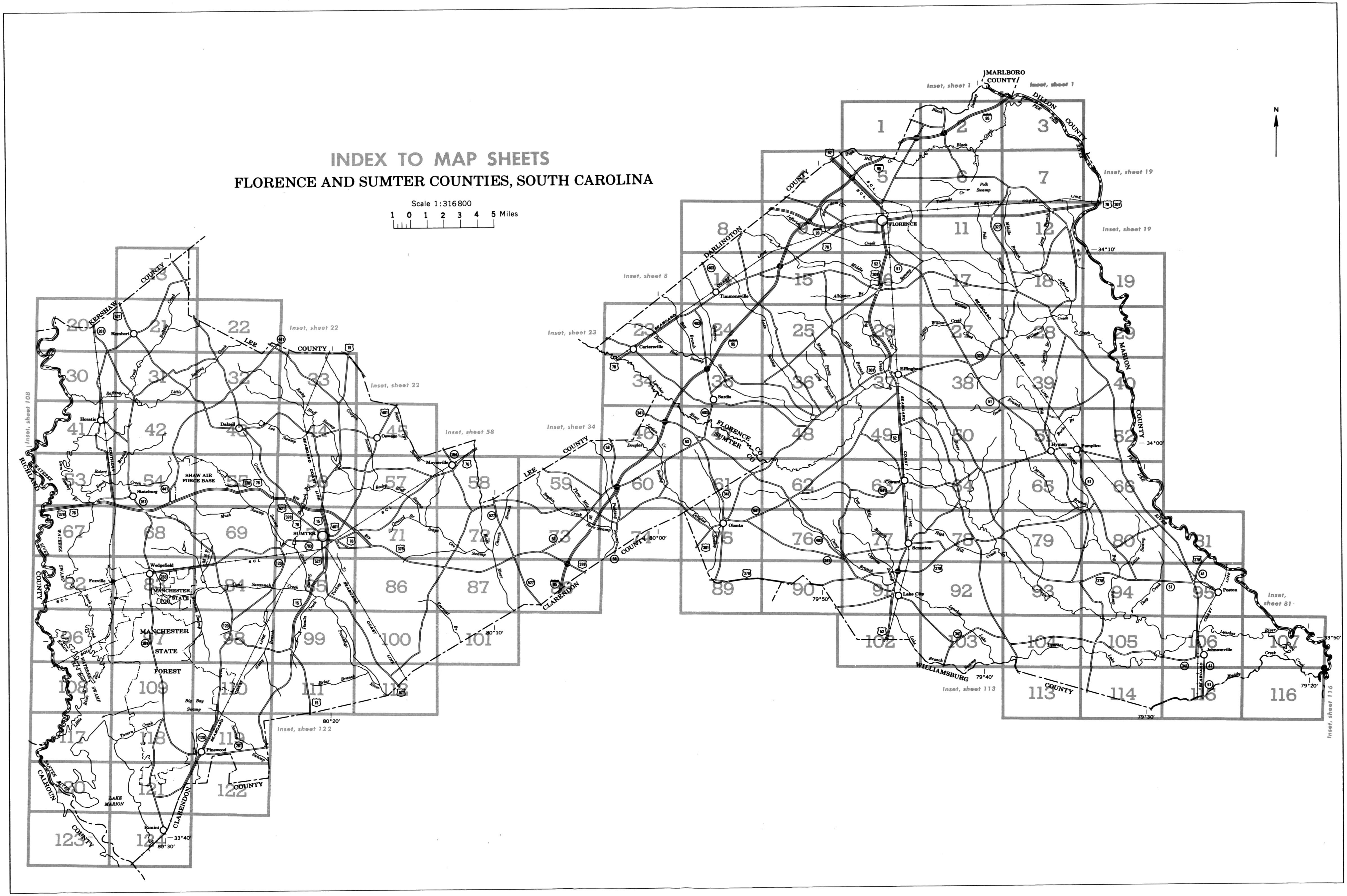
15 Wehadkee-Johnston association: Poorly drained and very poorly drained soils that are dominantly loamy throughout

Compiled 1972

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

INDEX TO MAP SHEETS

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA



SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, A, B, C, D, or E, shows the slope. Most symbols without a slope letter are those of nearly level soils but some are for land types that have a considerable range of slope. A final number, 2, shows that the soil is eroded.

SYMBOL	NAME
Ba	Barth loamy sand
Br	Brogdon sand
CaA	Cahaba loamy fine sand, 0 to 3 percent slopes
Cb	Cahaba-Leaf complex
Ce	Cape Fear loam
Cf	Chastain soils, frequently flooded *
Cg	Chastain-Chewacla association, frequently flooded *
Ch	Chastain-Chewacla-Congaree association, frequently flooded *
Cm	Chewacla soils, frequently flooded *
Cn	Chipley loamy sand, dark surface
Co	Congaree loam
Cv	Coxville fine sandy loam
Dp	Duplin fine sandy loam
DuA	Duplin and Exum soils, 0 to 2 percent slopes
DuB	Duplin and Exum soils, 2 to 6 percent slopes
Ex	Exum sandy loam
FaA	Faceville loamy sand, 0 to 2 percent slopes
FaB	Faceville loamy sand, 2 to 6 percent slopes
FaD	Faceville loamy sand, 6 to 15 percent slopes
FuB	Fuquay sand, 0 to 4 percent slopes
Go	Goldsboro loamy sand
Gp	Goldsboro loamy sand, moderately deep variant
GrA	Greenville loamy sand, 0 to 2 percent slopes
GrB	Greenville loamy sand, 2 to 6 percent slopes
GrC	Greenville loamy sand, 6 to 10 percent slopes
GsA	Greenville sandy loam, 0 to 2 percent slopes
GsB	Greenville sandy loam, 2 to 6 percent slopes
Hy	Hyde loam
IrA	Irvington loamy sand, 0 to 2 percent slopes
IrB	Irvington loamy sand, 2 to 6 percent slopes
IrC	Irvington loamy sand, 6 to 10 percent slopes
IrC2	Irvington loamy sand, 6 to 10 percent slopes, eroded
Jo	Johns fine sandy loam
Ka	Kalmia loamy sand
KeB	Kenansville sand, 0 to 4 percent slopes
KhD	Kershaw sand, 0 to 15 percent slopes
LaB	Lakeland sand, 0 to 6 percent slopes
LaD	Lakeland sand, 6 to 15 percent slopes
Ls	Leaf fine sandy loam
Lt	Lenoir loam
LuB	Lucy sand, 0 to 6 percent slopes
LuC	Lucy sand, 6 to 10 percent slopes
Ly	Lynchburg sandy loam
Lz	Lynn Haven sand

SYMBOL	NAME
Ma	Made land
Mc	McColl fine sandy loam
Mp	Mine pits and dumps
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
NrA	Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes
On	Olanta loamy sand
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
OrB	Orangeburg loamy sand, 2 to 6 percent slopes
OrC	Orangeburg loamy sand, 6 to 10 percent slopes
OrD	Orangeburg loamy sand, 10 to 15 percent slopes
Os	Osier loamy sand
Pa	Pantego loam
PlB	Pocalla sand, 0 to 4 percent slopes
Po	Ponzer soils *
Ra	Rains sandy loam
Rd	Rains sandy loam, moderately deep variant
ReA	Red Bay sandy loam, 0 to 2 percent slopes
ReB	Red Bay sandy loam, 2 to 6 percent slopes
Rm	Rembert loam
Rs	Rimini sand
Ru	Rutlege loamy sand
SuC	Sunsweet loamy fine sand, 6 to 10 percent slopes
SuE	Sunsweet loamy fine sand, 10 to 25 percent slopes
Sw	Swamp
TrB	Troup sand, 0 to 6 percent slopes
TrD	Troup sand, 6 to 15 percent slopes
VaA	Varina loamy fine sand, 0 to 2 percent slopes
VaB	Varina loamy fine sand, 2 to 6 percent slopes
VcB	Vaucluse loamy sand, 2 to 6 percent slopes
VcC	Vaucluse loamy sand, 6 to 10 percent slopes
VcD	Vaucluse loamy sand, 10 to 15 percent slopes
VeC2	Vaucluse sandy loam, 3 to 8 percent slopes, eroded
WgB	Wagram sand, 0 to 6 percent slopes
WgC	Wagram sand, 6 to 10 percent slopes
WgD	Wagram sand, 10 to 15 percent slopes
Wh	Wahee fine sandy loam
Wk	Wehadkee-Chastain association, frequently flooded *
Wn	Wehadkee and Johnston soils, frequently flooded *

* The composition of these units is more variable than that of the other units in the county but has been controlled well enough to interpret for the expected use of the soils.

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads
- Divided
- Good motor
- Poor motor
- Trail

Highway markers
- National Interstate
- U. S.
- State or county

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail
- Railroad
- Ferry (FY)
- Ford (FORD)
- Grade
- R. R. over
- R. R. under

Buildings
- School
- Church

Mine and quarry

Gravel pit

Power line

Pipeline

Cemetery

Dams

Levee

Tanks

Well, oil or gas

Forest fire or lookout station

Windmill

Located object

BOUNDARIES

National or state

County

Minor civil division

Reservation

Land grant

Small park, cemetery, airport

Limit of soil survey

DRAINAGE

Streams, double-line
- Perennial
- Intermittent

Streams, single-line
- Perennial
- Intermittent
  - Crossable with tillage implements
  - Not crossable with tillage implements
  - Unclassified

Canals and ditches

Lakes and ponds
- Perennial (water, w)
- Intermittent (int)

Spring

Marsh or swamp

Wet spot

Drainage end or alluvial fan

RELIEF

Escarpments
- Bedrock
- Other

Short steep slope

Prominent peak

Depressions (Large, Small)
- Crossable with tillage implements
- Not crossable with tillage implements
- Contains water most of the time

SOIL SURVEY DATA

Soil boundary and symbol (Dx)

Gravel

Stoniness
- Stony
- Very stony

Rock outcrops

Chert fragments

Clay spot

Sand spot

Gumbo or scabby spot

Made land

Severely eroded spot

Blowout, wind erosion

Gully

Dug pond

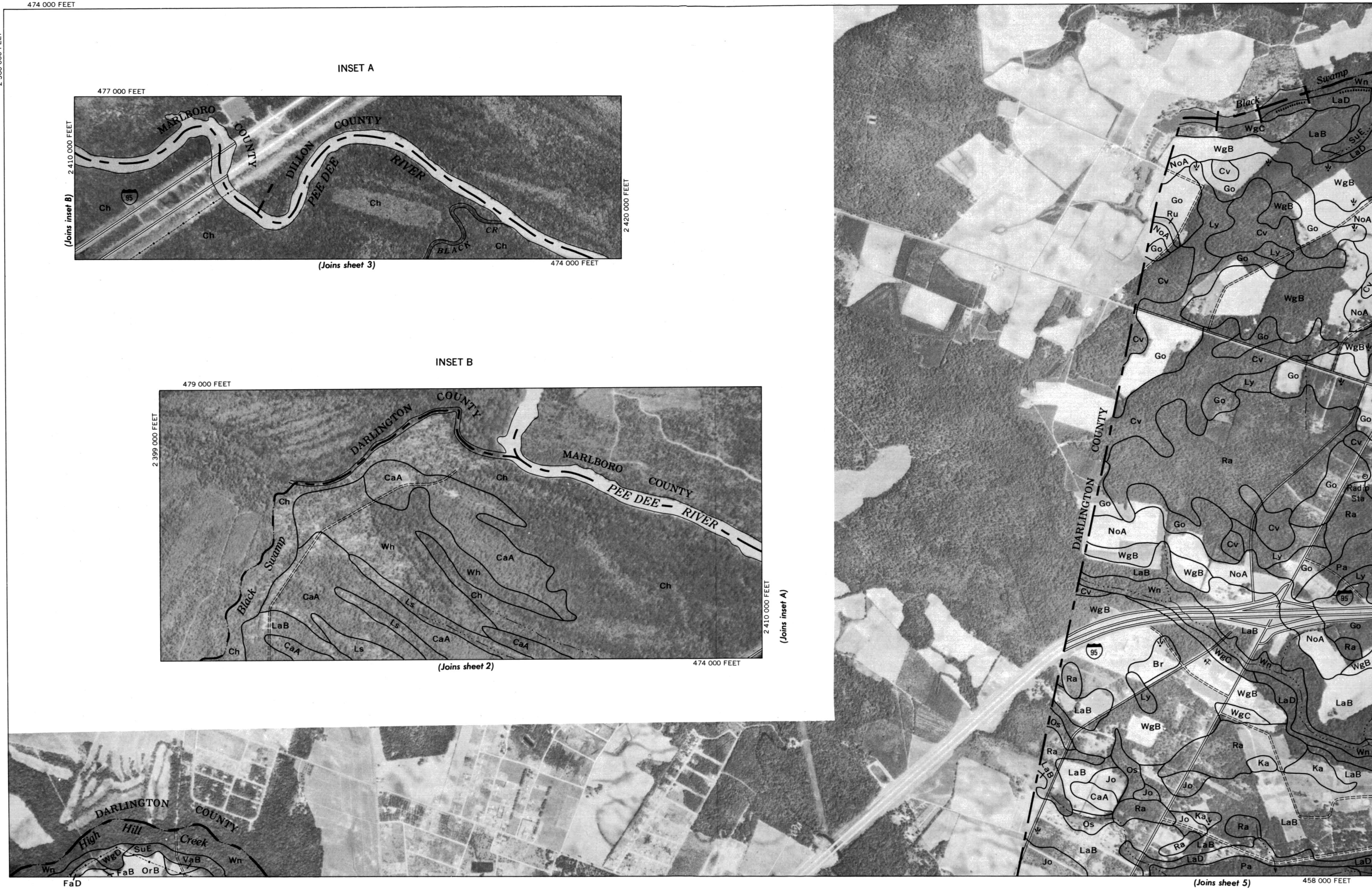
GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and that of the soil series to which the mapping unit belongs. A description of the capability units is given on pages 45 to 53. Other information is given in tables as follows:

Acreage and extent, table 1, page 9.
Suitability of soils for stated crops, table 2, page 54.
Estimated yields of cultivated crops and pasture plants, table 3, page 58.
Suitability of the soils for woodland use, table 4, page 64.
Suitability of the soils for use as wildlife habitat, table 5, page 70.
Engineering uses of the soils, tables 6, 7, and 8, pages 74, 78, and 86.
Town and country planning, table 9, page 92.

Map symbol	Mapping unit	Described on page	Capability unit: Symbol	Capability unit: Page	Woodland suitability group: Number	Woodland suitability group: Page
Ba	Barth loamy sand	11	IIIw-1	50	3w2	68
Br	Brogdon sand	12	IIs-1	48	2o1	57
CaA	Cahaba loamy fine sand, 0 to 3 percent slopes	13	I-1	46	2o7	57
Cb	Cahaba-Leaf complex	13				
	Cahaba soil	--	IIIw-5	50	2o7	57
	Leaf soil	--	IIIw-5	50	2w9	68
Ce	Cape Fear loam	13	IVw-2	51	2w9	68
Cf	Chastain soils, frequently flooded	14	VIIw-2	53	2w9	68
Cg	Chastain-Chewacla association, frequently flooded	14				
	Chastain soil	--	VIIw-2	53	2w9	68
	Chewacla soil	--	VIIw-2	53	1w8	57
Ch	Chastain-Chewacla-Congaree association, frequently flooded	14				
	Chastain soil	--	VIIw-2	53	2w9	68
	Chewacla soil	--	VIIw-2	53	1w8	57
	Congaree soil	--	VIIw-2	53	1o7	57
Cm	Chewacla soils, frequently flooded	15	VIIw-2	53	1w8	57
Cn	Chipley loamy sand, dark surface	15	IIIw-1	50	3w2	68
Co	Congaree loam	16	IIw-4	47	1o7	57
Cv	Coxville fine sandy loam	17	IIIw-2	50	2w9	68
Dp	Duplin fine sandy loam	17	IIw-2	47	2w8	68
DuA	Duplin and Exum soils, 0 to 2 percent slopes	17	IIw-2	47	2w8	68
DuB	Duplin and Exum soils, 2 to 6 percent slopes	18	IIe-3	47	2w8	68
Ex	Exum sandy loam	18	IIw-2	47	2w8	68
FaA	Faceville loamy sand, 0 to 2 percent slopes	19	I-2	47	3o1	68
FaB	Faceville loamy sand, 2 to 6 percent slopes	19	IIe-2	47	3o1	68
FaD	Faceville loamy sand, 6 to 15 percent slopes	19	IVe-1	51	3o1	68
FuB	Fuquay sand, 0 to 4 percent slopes	20	IIs-1	48	3s2	68
Go	Goldsboro loamy sand	20	IIw-2	47	2w8	68
Gp	Goldsboro loamy sand, moderately deep variant	21	IIw-2	47	2w8	68
GrA	Greenville loamy sand, 0 to 2 percent slopes	22	I-2	47	3o1	68
GrB	Greenville loamy sand, 2 to 6 percent slopes	22	IIe-2	47	3o1	68
GrC	Greenville loamy sand, 6 to 10 percent slopes	22	IIIe-2	48	3o1	68
GsA	Greenville sandy loam, 0 to 2 percent slopes	22	I-2	47	3o1	68
GsB	Greenville sandy loam, 2 to 6 percent slopes	22	IIe-2	47	3o1	68
Hy	Hyde loam	23	IIIw-4	50	1w9	57
IrA	Irvington loamy sand, 0 to 2 percent slopes	23	IIw-5	47	2o7	57
IrB	Irvington loamy sand, 2 to 6 percent slopes	24	IIe-4	47	2o7	57
IrC	Irvington loamy sand, 6 to 10 percent slopes	24	IIIe-4	50	2o7	57
IrC2	Irvington loamy sand, 6 to 10 percent slopes, eroded	24	IVe-4	51	2o7	57
Jo	Johns fine sandy loam	24	IIw-2	47	2w2	57
Ka	Kalmia loamy sand	25	I-1	46	2o7	57
KeB	Kenansville sand, 0 to 4 percent slopes	26	IIs-1	48	3s2	68
KhD	Kershaw sand, 0 to 15 percent slopes	26	VIIs-1	53	5s3	69
LaB	Lakeland sand, 0 to 6 percent slopes	27	IVs-1	52	4s2	68
LaD	Lakeland sand, 6 to 15 percent slopes	27	VIs-1	53	4s2	68
Ls	Leaf fine sandy loam	27	IVw-2	51	2w9	68
Lt	Lenoir loam	28	IIIw-6	51	2w8	68
LuB	Lucy sand, 0 to 6 percent slopes	28	IIs-1	48	3s2	68
LuC	Lucy sand, 6 to 10 percent slopes	29	IIIe-5	50	3s2	68
Ly	Lynchburg sandy loam	29	IIw-2	47	2w8	68
Lz	Lynn Haven sand	30	Vw-3	52	4w3	69
Ma	Made land	30	not classified	--	not classified	--
Mc	McColl fine sandy loam	30	IIIw-2	50	2w9	68
Mp	Mine pits and dumps	31	VIIs-2	53	not classified	--
NoA	Norfolk loamy sand, 0 to 2 percent slopes	31	I-1	46	2o1	57
NoB	Norfolk loamy sand, 2 to 6 percent slopes	31	IIe-1	47	2o1	57
NrA	Norfolk loamy sand, moderately deep variant, 0 to 2 percent slopes	32	I-1	46	2o1	57
On	Olanta loamy sand	33	IIw-2	47	2w2	57
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	33	I-1	46	2o1	57
OrB	Orangeburg loamy sand, 2 to 6 percent slopes	33	IIe-1	47	2o1	57
OrC	Orangeburg loamy sand, 6 to 10 percent slopes	33	IIIe-1	48	2o1	57
OrD	Orangeburg loamy sand, 10 to 15 percent slopes	34	IVe-1	51	2o1	57
Os	Osier loamy sand	34	Vw-2	52	3w3	68
Pa	Pantego loam	35	IIIw-4	50	1w9	57
PlB	Pocalla sand, 0 to 4 percent slopes	35	IIs-1	48	3s2	68
Po	Ponzer soils	36	VIIw-1	53	4w3	69
Ra	Rains sandy loam	36	IIIw-4	50	2w3	68
Rd	Rains sandy loam, moderately deep variant	37	IIIw-4	50	2w3	68
ReA	Red Bay sandy loam, 0 to 2 percent slopes	37	I-1	46	2o1	57
ReB	Red Bay sandy loam, 2 to 6 percent slopes	37	IIe-1	47	2o1	57
Rm	Rembert loam	38	IIIw-2	50	2w9	68
Rs	Rimini sand	39	VIs-1	53	5s3	69
Ru	Rutlege loamy sand	39	Vw-2	52	2w3	68
SuC	Sunsweet loamy fine sand, 6 to 10 percent slopes	40	IIIe-3	49	3c2	68
SuE	Sunsweet loamy fine sand, 10 to 25 percent slopes	40	VIIe-2	53	3c2	68
Sw	Swamp	40	VIIw-1	53	not classified	--
TrB	Troup sand, 0 to 6 percent slopes	41	IIIs-1	51	3s2	68
TrD	Troup sand, 6 to 15 percent slopes	41	VIs-1	53	3s2	68
VaA	Varina loamy fine sand, 0 to 2 percent slopes	41	I-2	47	3o1	68
VaB	Varina loamy fine sand, 2 to 6 percent slopes	42	IIe-2	47	3o1	68
VcB	Vaucluse loamy sand, 2 to 6 percent slopes	42	IIe-4	47	3o1	68
VcC	Vaucluse loamy sand, 6 to 10 percent slopes	42	IIIe-4	50	3o1	68
VcD	Vaucluse loamy sand, 10 to 15 percent slopes	42	VIe-2	52	3o1	68
VeC2	Vaucluse sandy loam, 3 to 8 percent slopes, eroded	43	IVe-4	51	4d2	69
WgB	Wagram sand, 0 to 6 percent slopes	43	IIs-1	48	3s2	68
WgC	Wagram sand, 6 to 10 percent slopes	43	IIIe-5	50	3s2	68
WgD	Wagram sand, 10 to 15 percent slopes	43	IVe-5	51	3s2	68
Wh	Wahee fine sandy loam	44	IIIw-3	50	2w8	68
Wk	Wehadkee-Chastain association, frequently flooded	44				
	Wehadkee soil	--	VIIw-2	53	1w9	57
	Chastain soil	--	VIIw-2	53	2w9	68
Wn	Wehadkee and Johnston soils, frequently flooded	45	VIIw-2	53	1w9	57

1



N

1 Mile
5 000 Feet
Scale 1:20 000

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 1

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 2

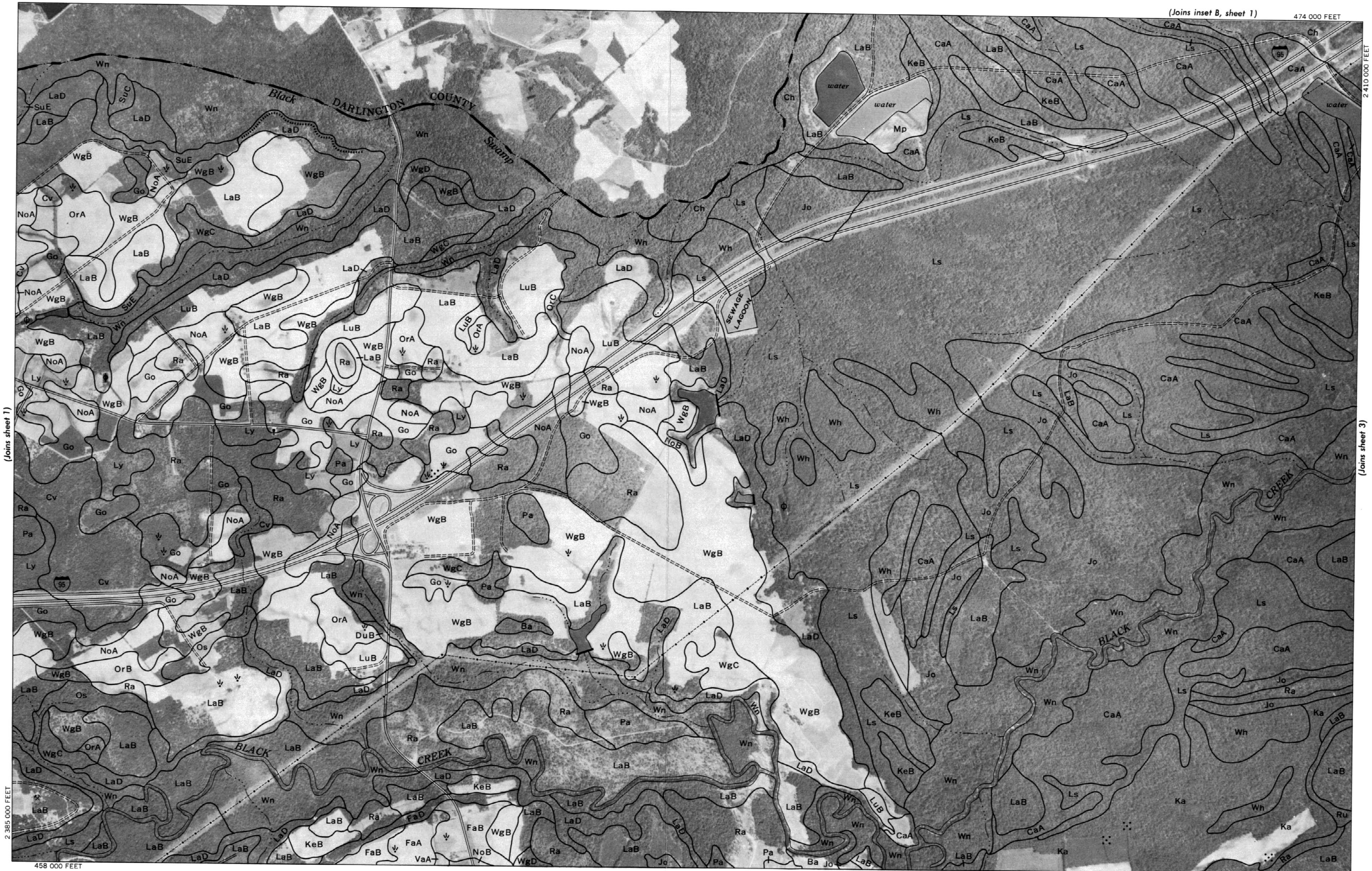
N

Scale 1:20 000

1 Mile — 5 000 Feet

0 — ¼ — ½ — ¾ — 1

0 — 1 000 — 2 000 — 3 000 — 4 000 — 5 000



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 2

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

(Joins inset A, sheet 1)

(Joins sheet 2)

(Joins sheet 7) | (Inset A, sheet 19)

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 3

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 4

N

Scale 1:20 000

1 Mile | ¾ | ½ | ¼ | 0

5 000 Feet | 4 000 | 3 000 | 2 000 | 1 000 | 0

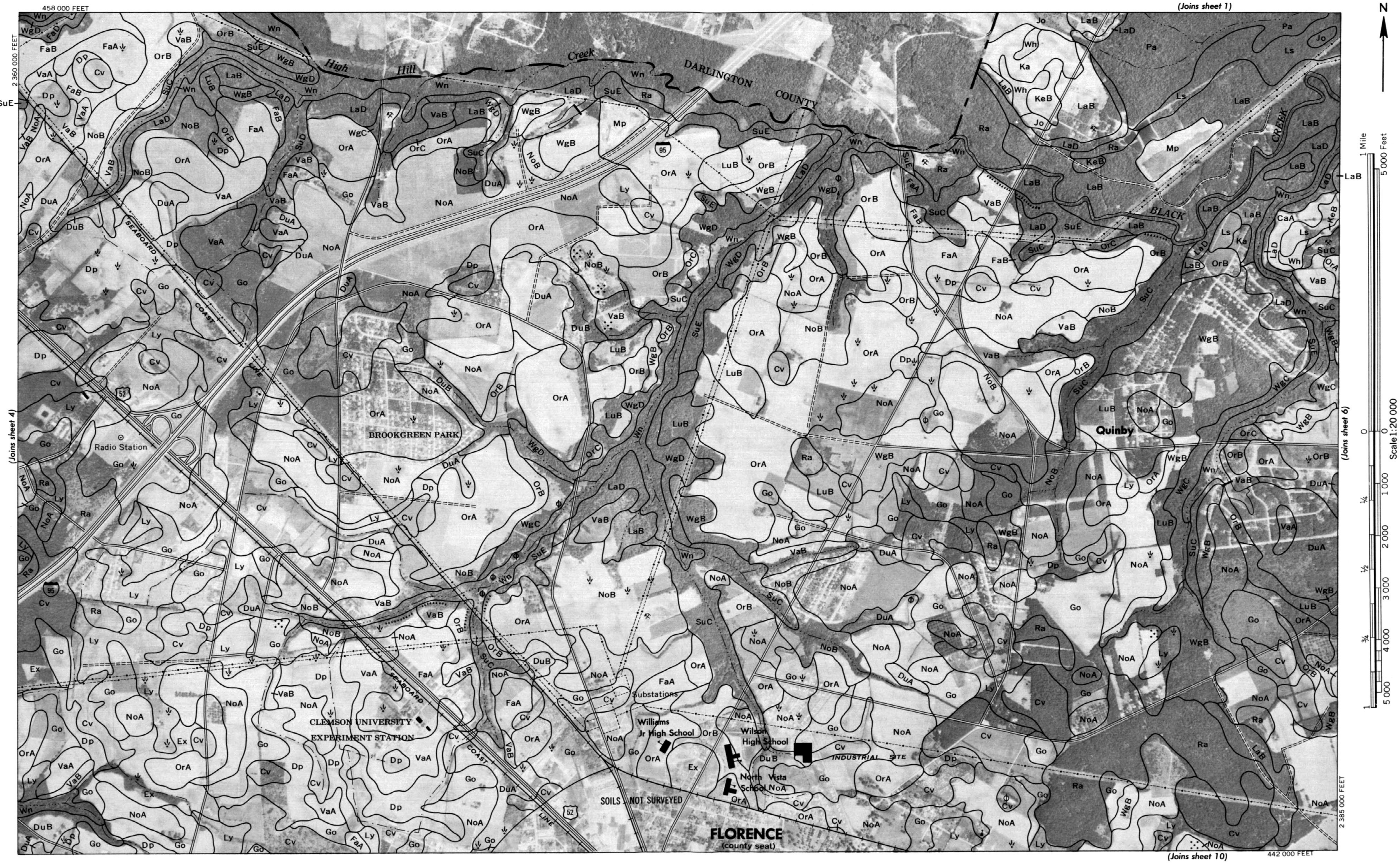
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

5

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 5

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 6

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

7

N

Scale 1:20 000

1 Mile | 3/4 | 1/2 | 1/4 | 0

5 000 Feet | 4 000 | 3 000 | 2 000 | 1 000 | 0

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 7

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

8

N

Scale 1:20 000

1 Mile 0 ¼ ½ ¾ 1

5 000 Feet 0 1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 9

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 10

N

(Joins sheet 5)

442 000 FEET

2 385 000 FEET

(Joins sheet 9)

(Joins sheet 11)

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

2 360 000 FEET

426 000 FEET

(Joins sheet 16)

52 301

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

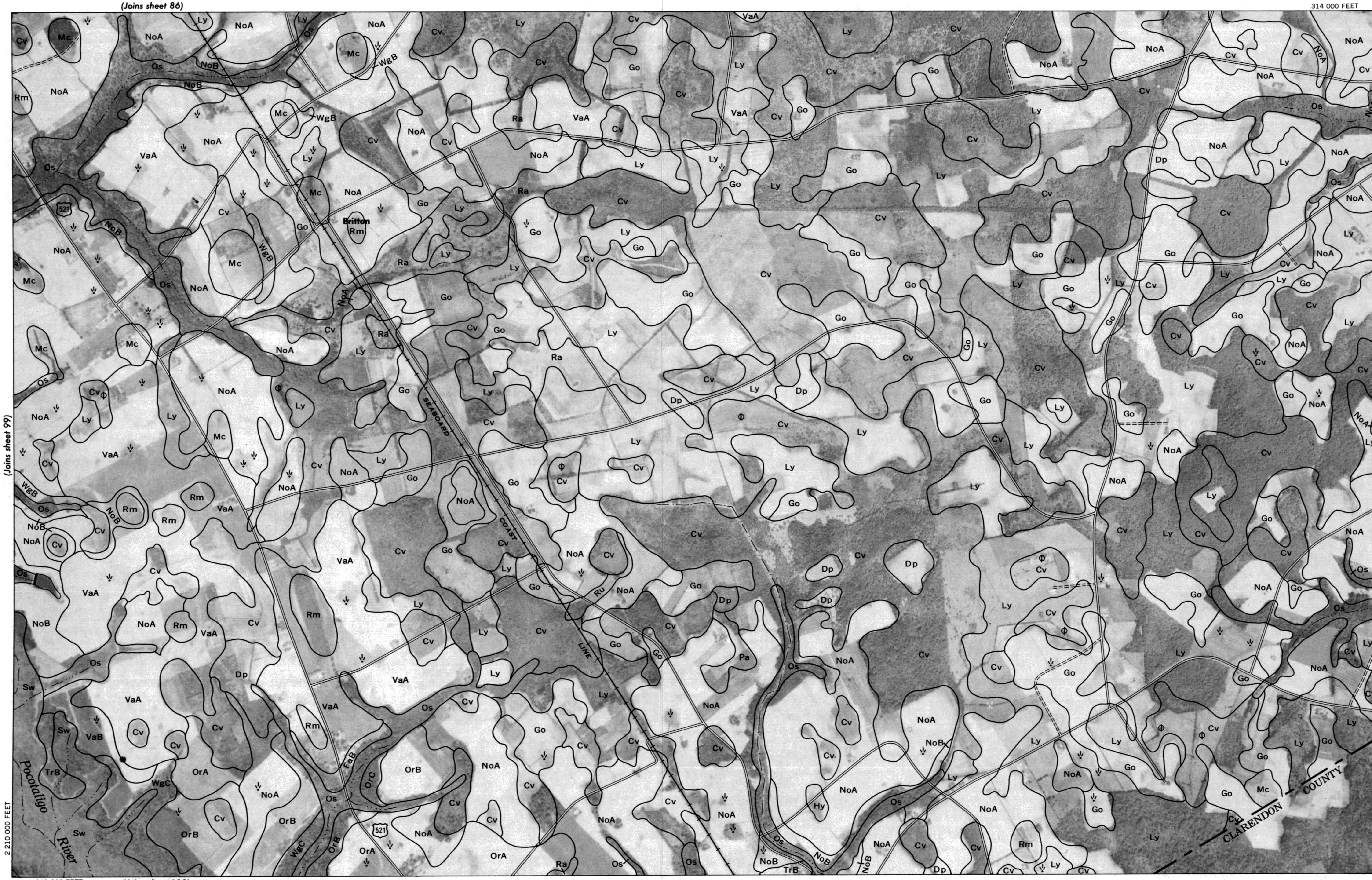
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

N

Scale 1:20 000

1 Mile, 3/4, 1/2, 1/4, 0

5 000 Feet, 4 000, 3 000, 2 000, 1 000, 0, 5 000



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 100

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

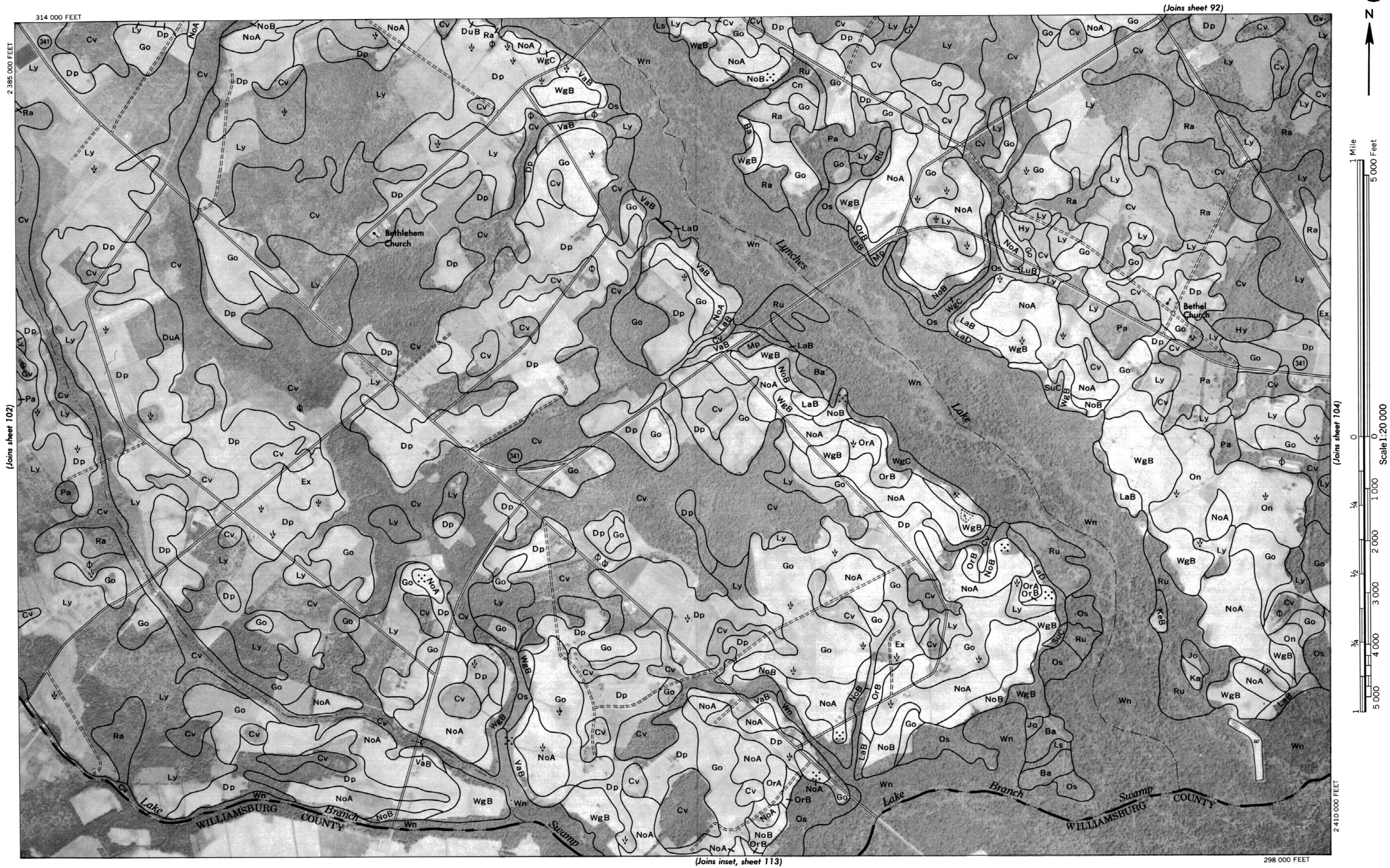
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 101

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 102

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 103

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

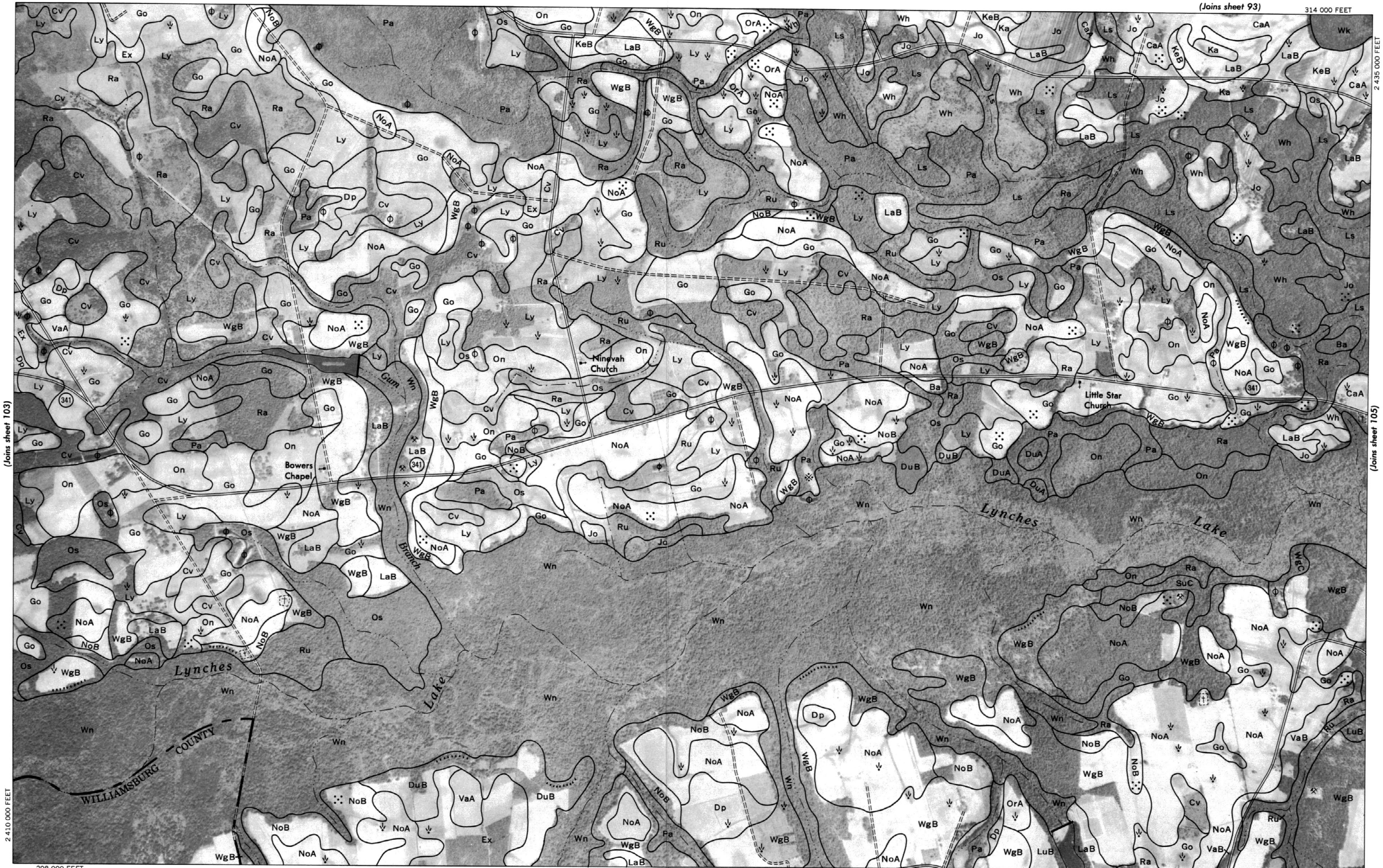
1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

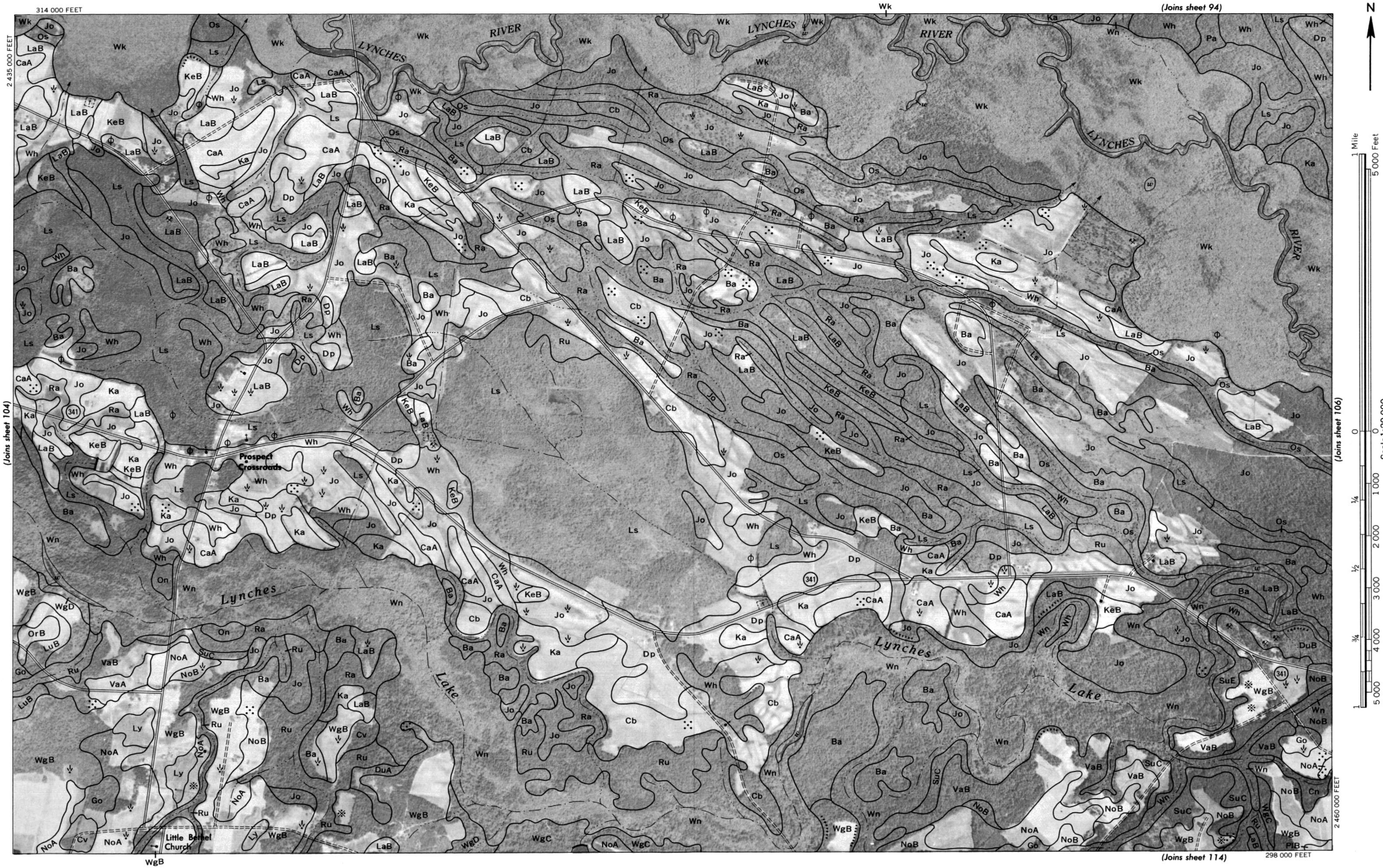


This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 104

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

105



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 105

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

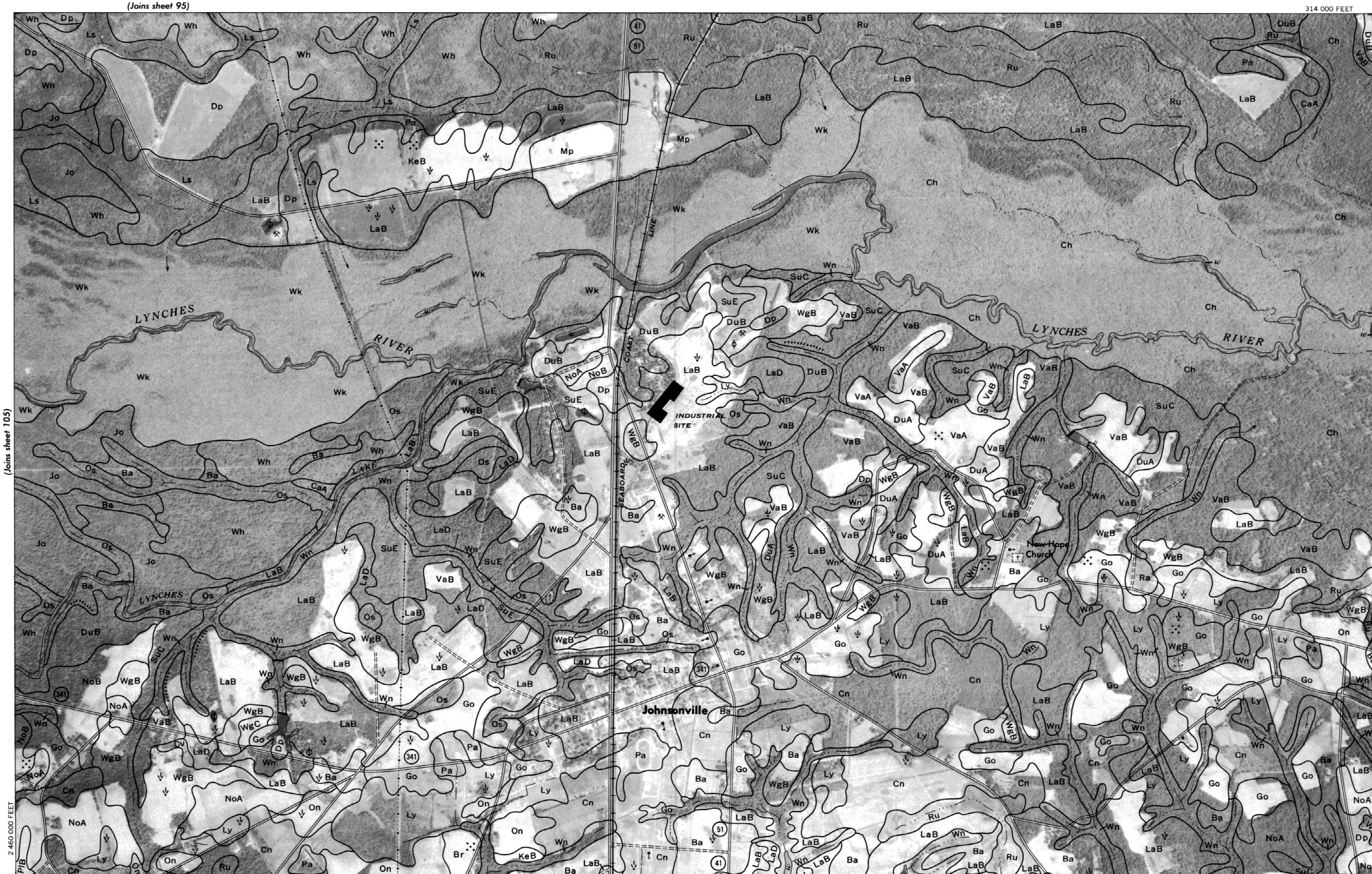
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 106

N

(Joins sheet 95)

314 000 FEET

2 485 000 FEET



(Joins sheet 105)

(Joins sheet 107)

Scale 1:20 000

1 Mile
5 000 Feet
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

2 460 000 FEET

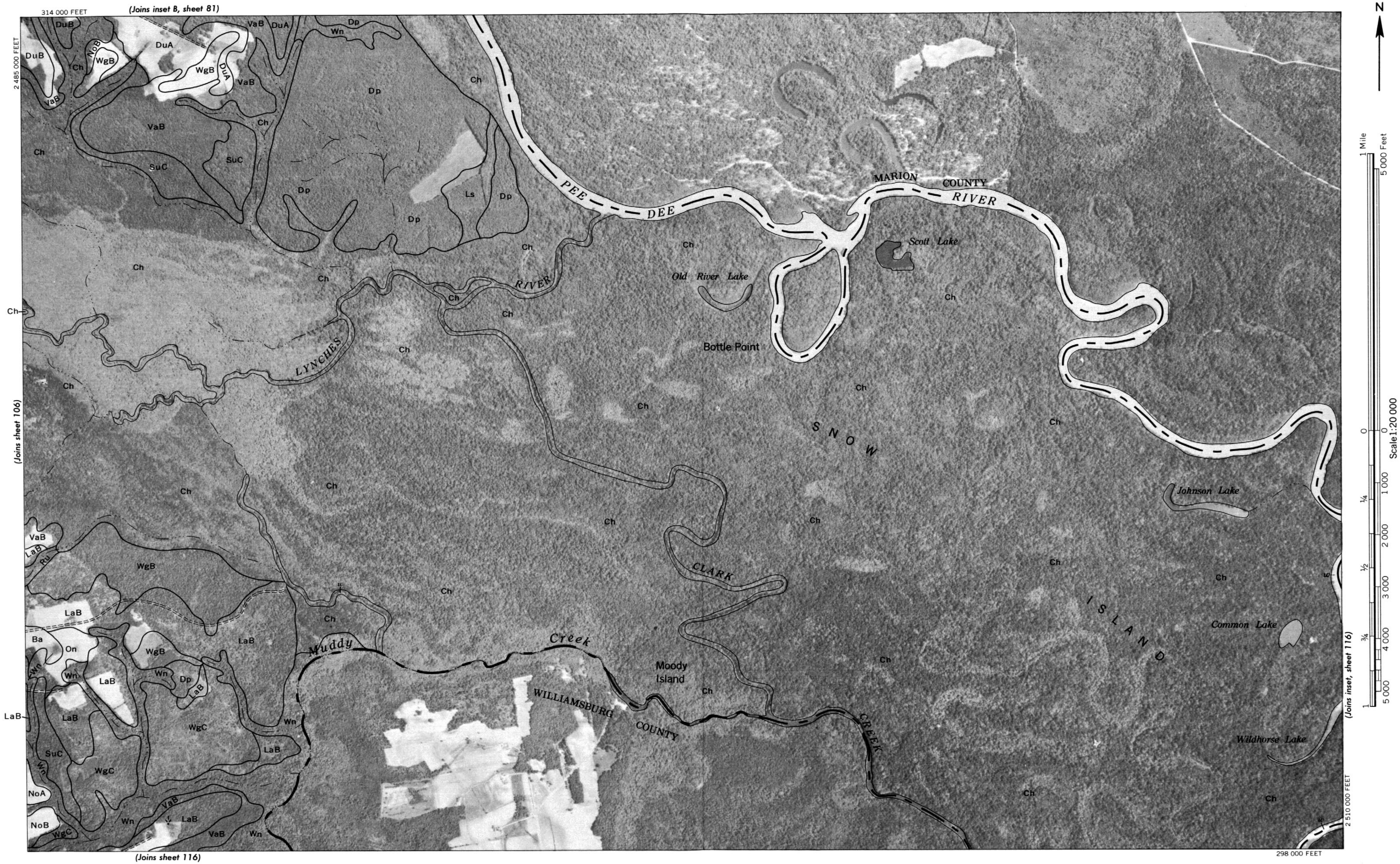
298 000 FEET

(Joins sheet 115)

LaD

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

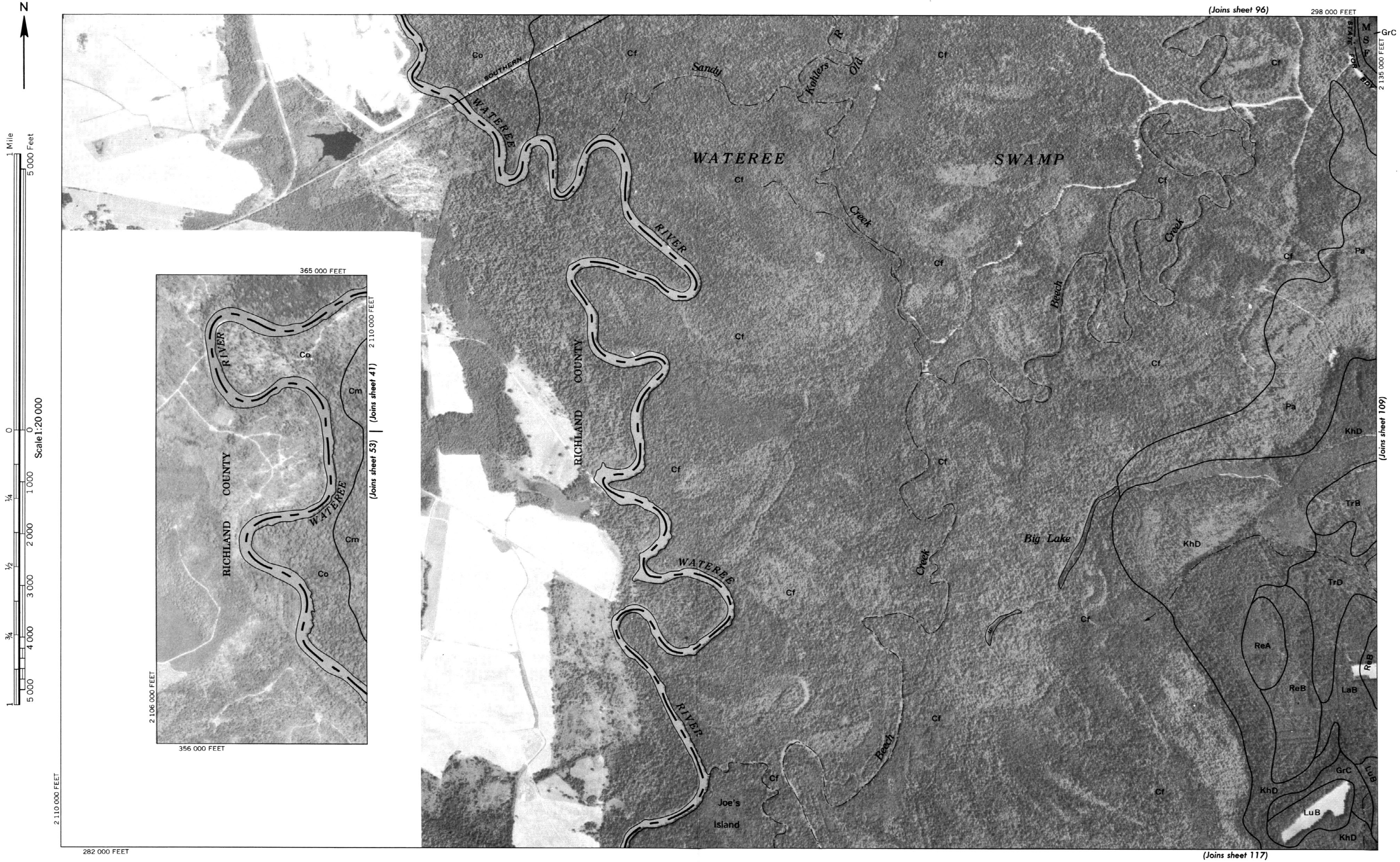


FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 107

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 108



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

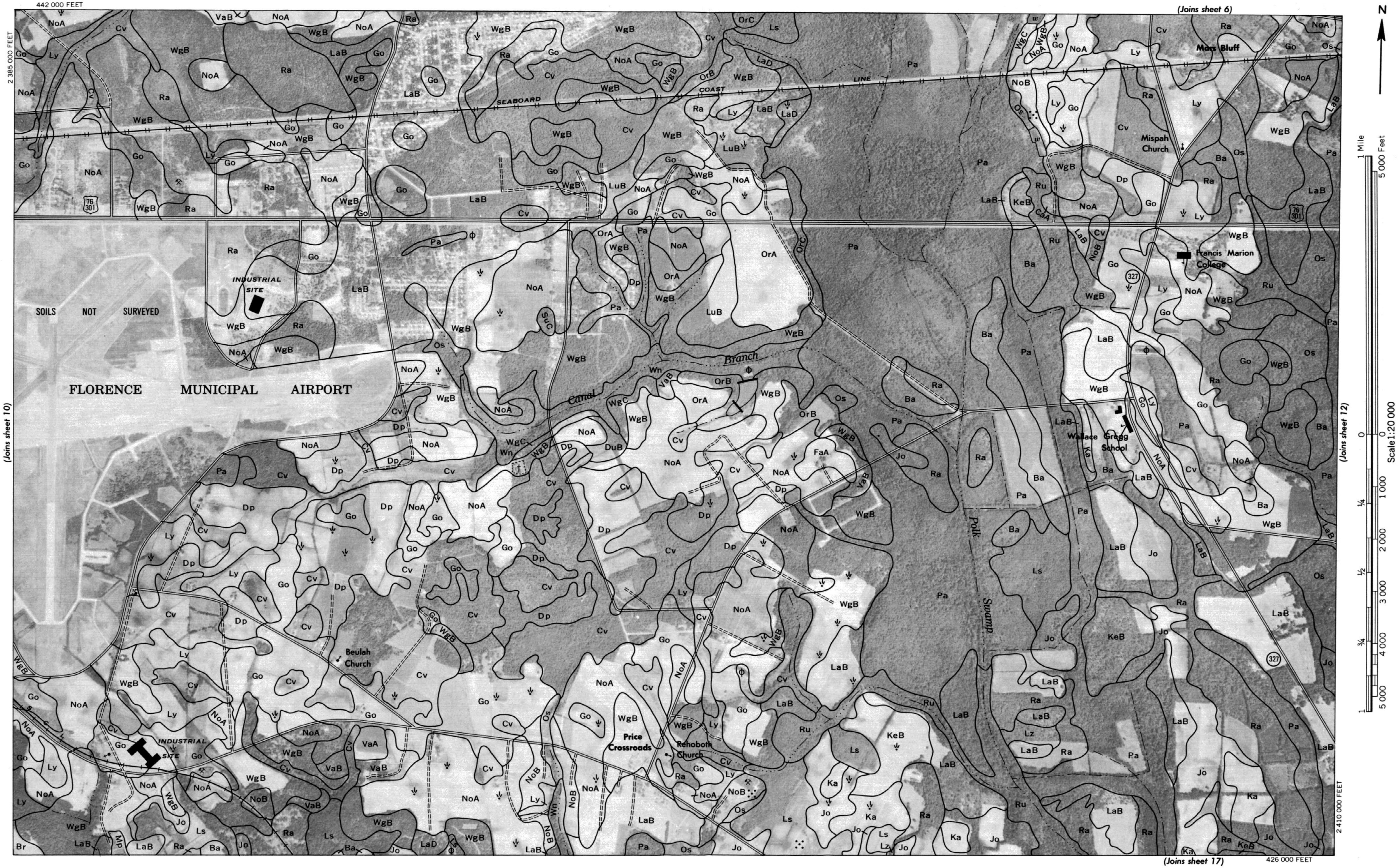
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 109

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



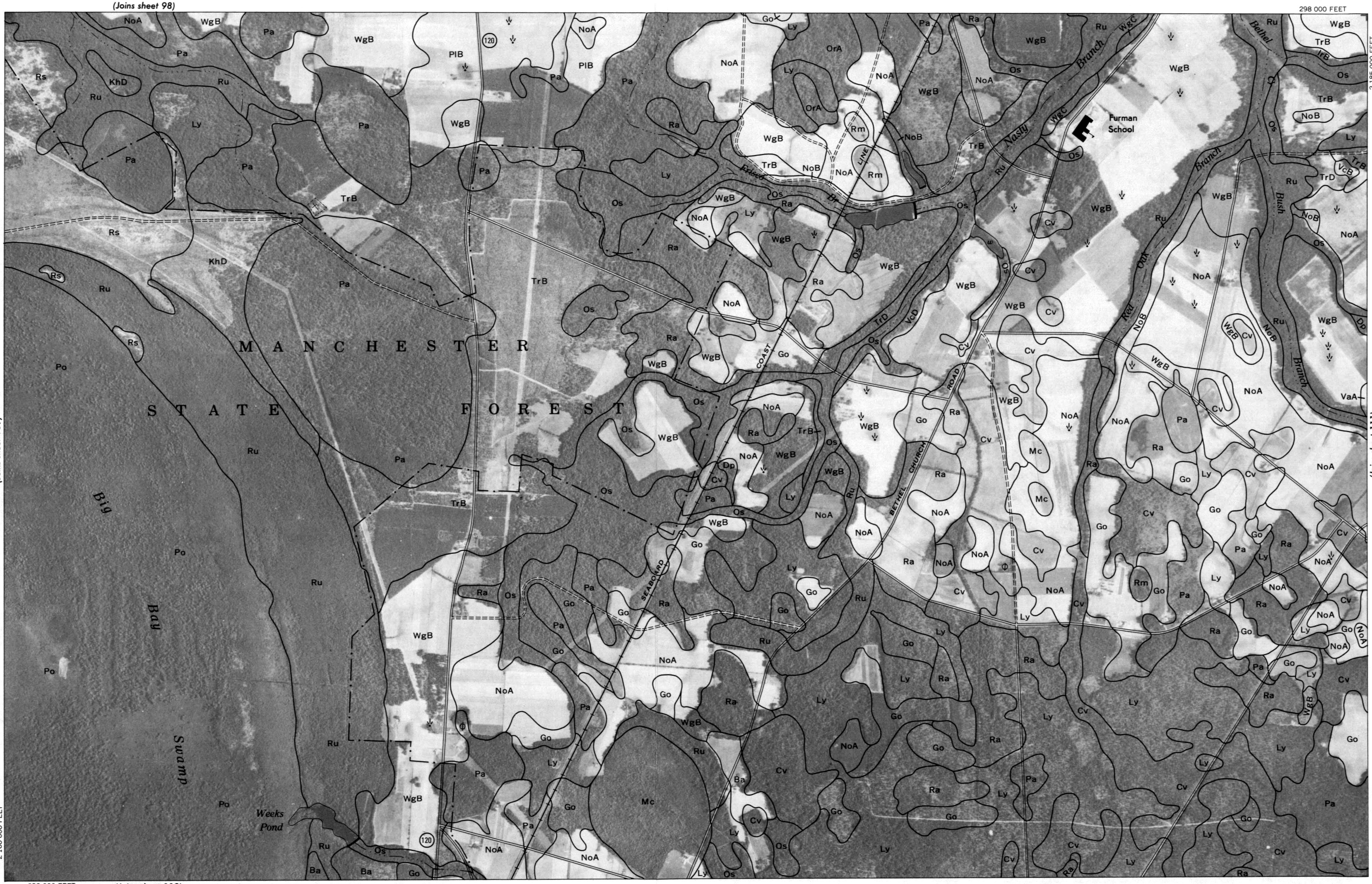
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

(Joins sheet 98)

298 000 FEET

2 185 000 FEET



1 Mile
5 000 Feet
0
Scale 1:20 000
¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

(Joins sheet 109)

(Joins sheet 111)

2 160 000 FEET

282 000 FEET

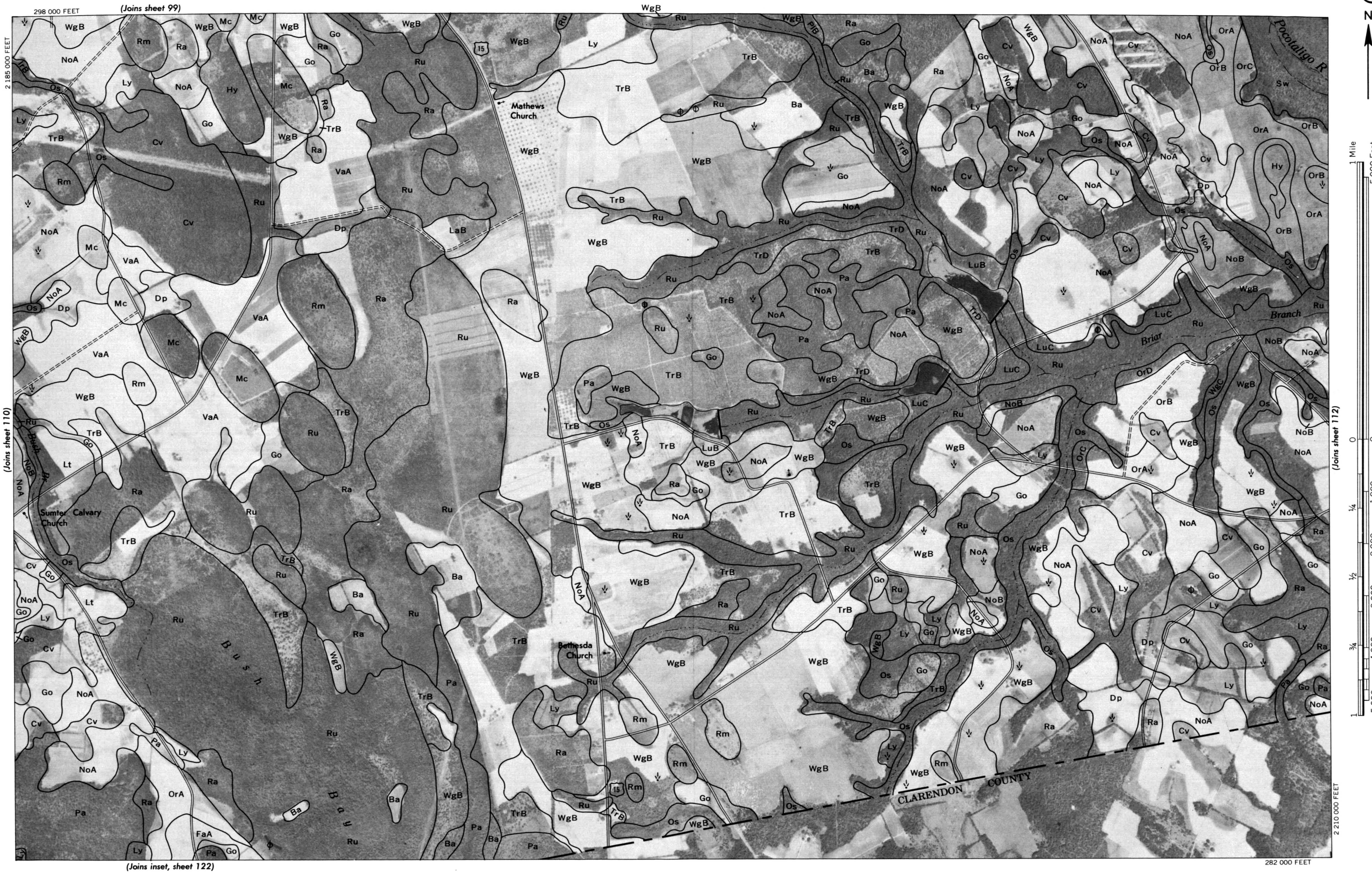
(Joins sheet 119)

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 111

111



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 111

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 112

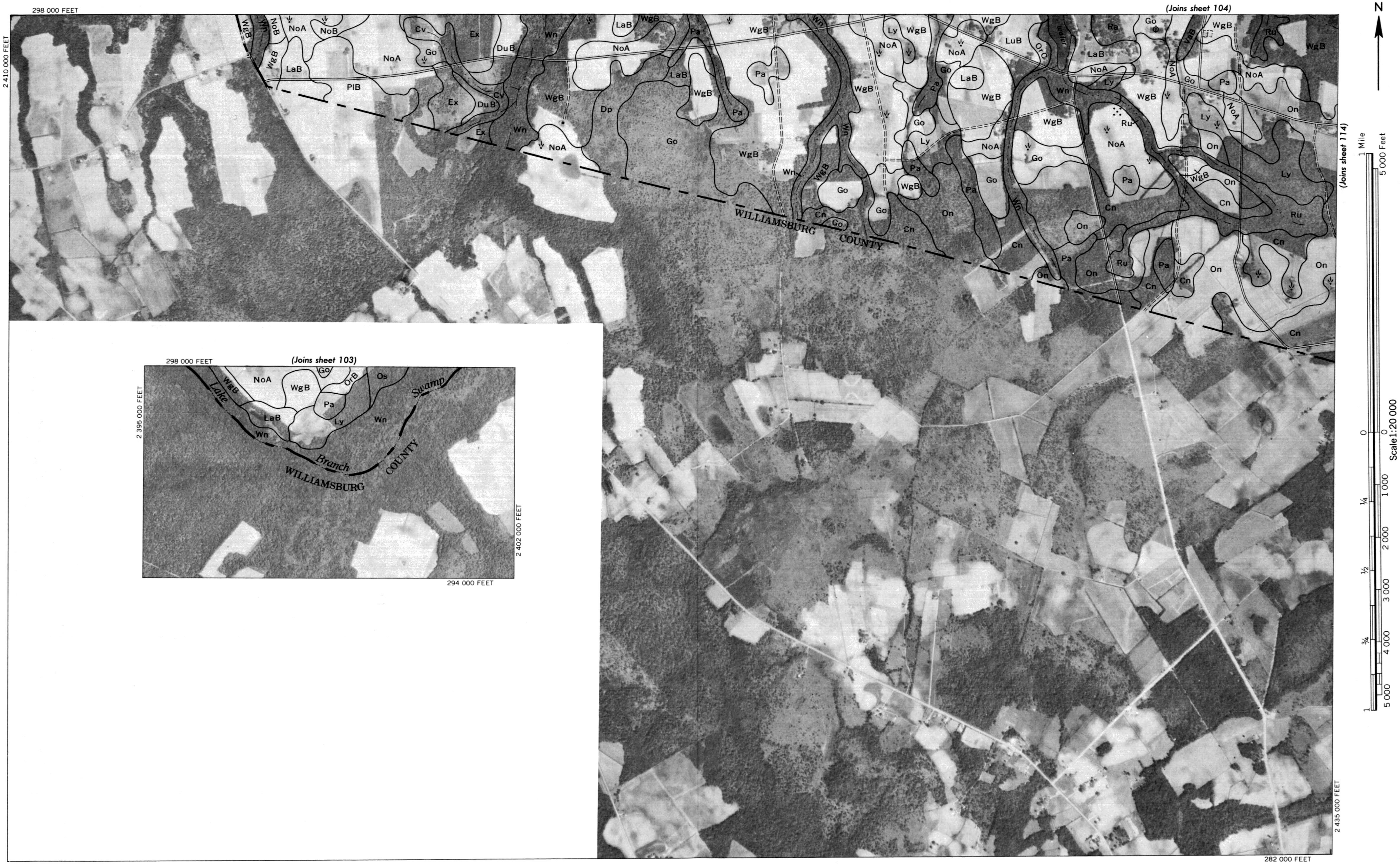
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 112

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

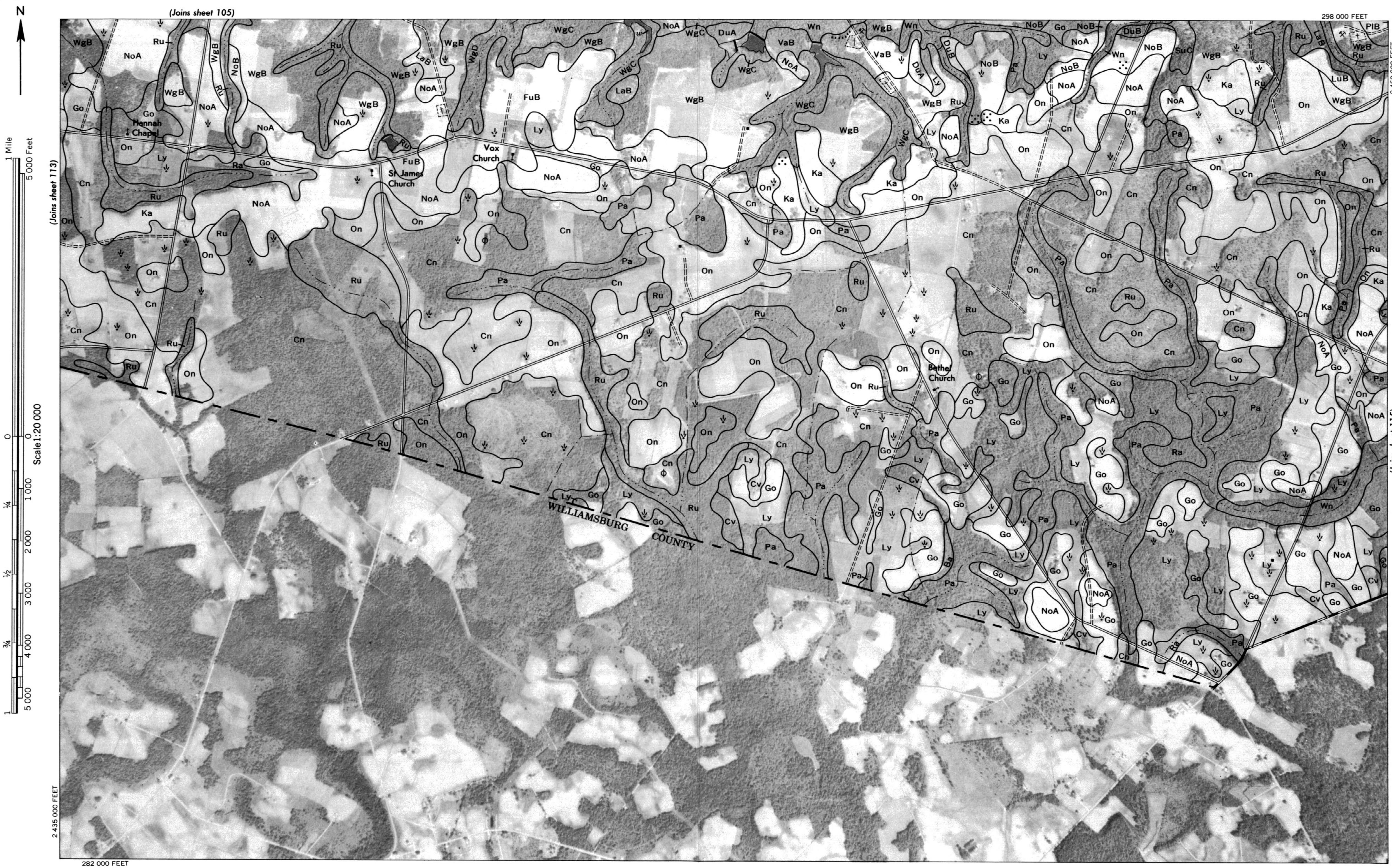
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 113

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 114



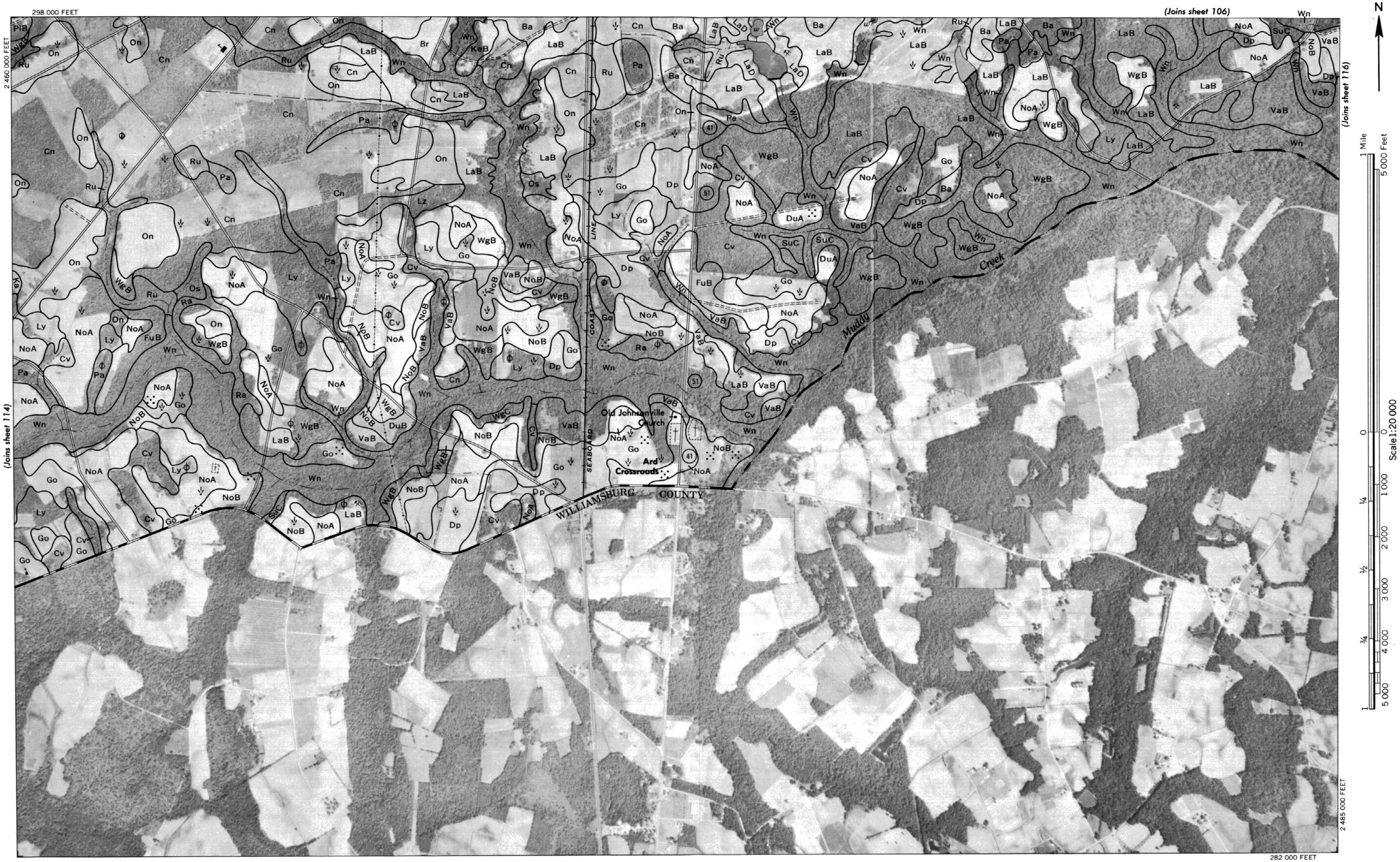
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 114

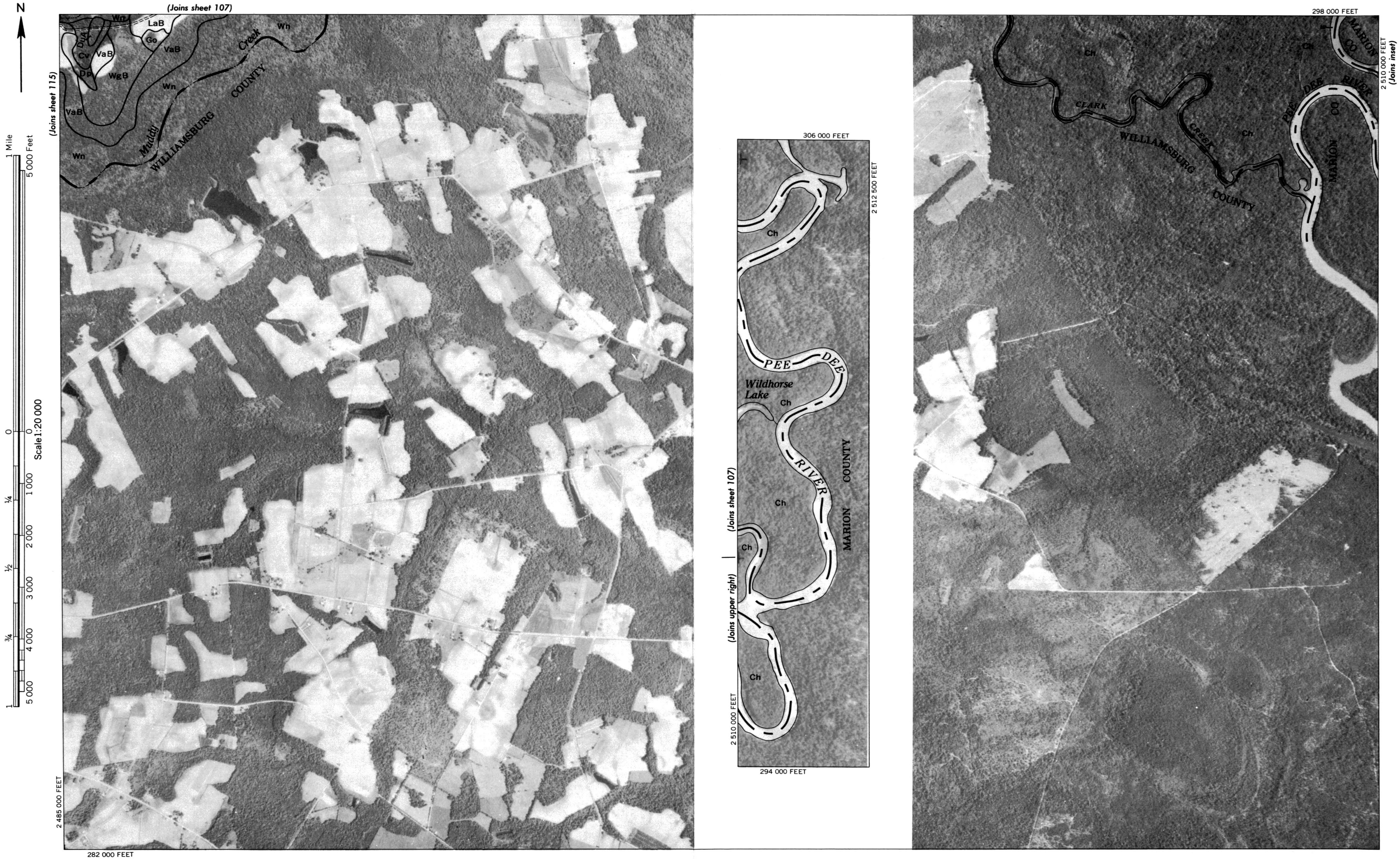
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 115

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

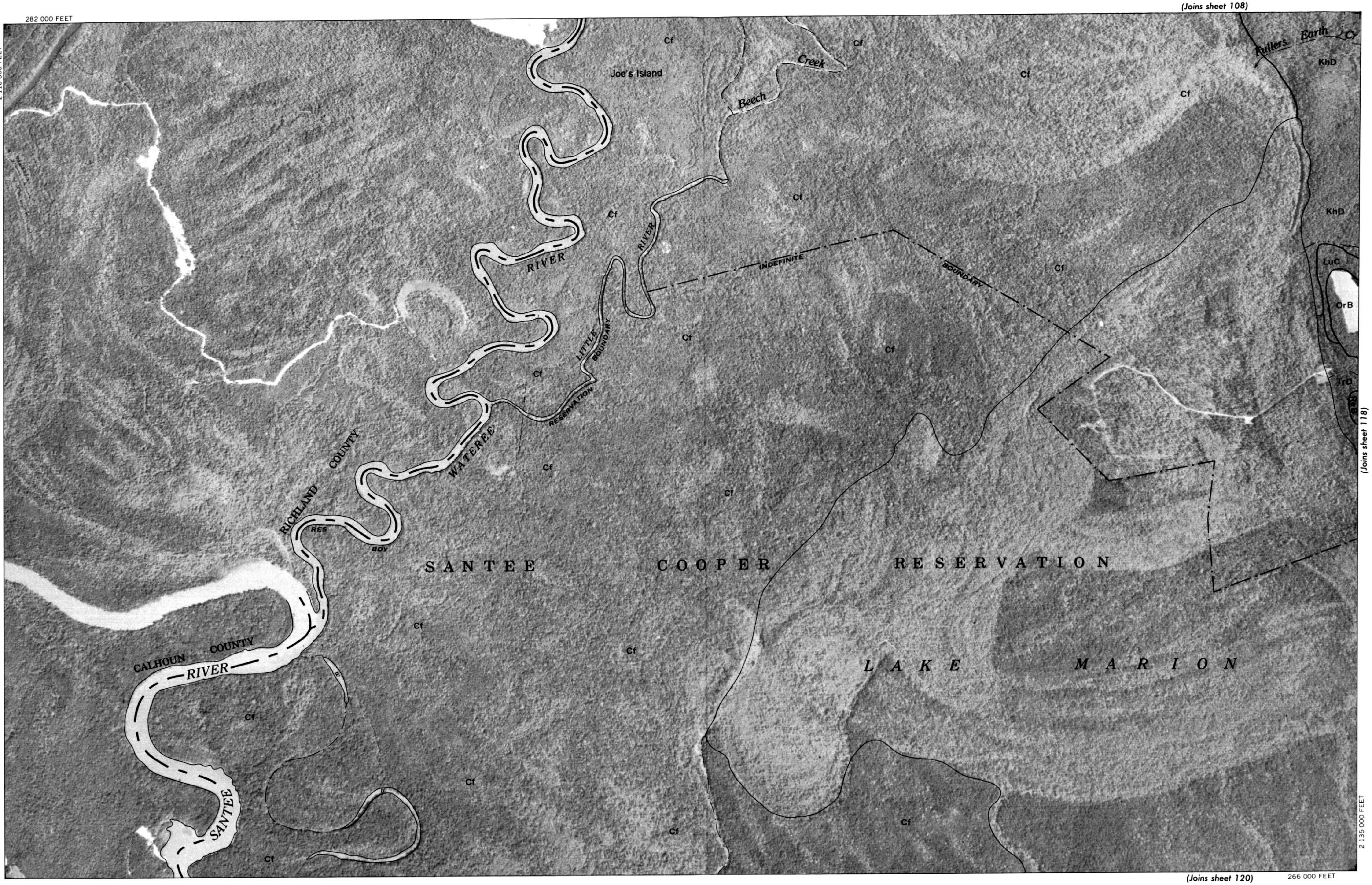


Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 117

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

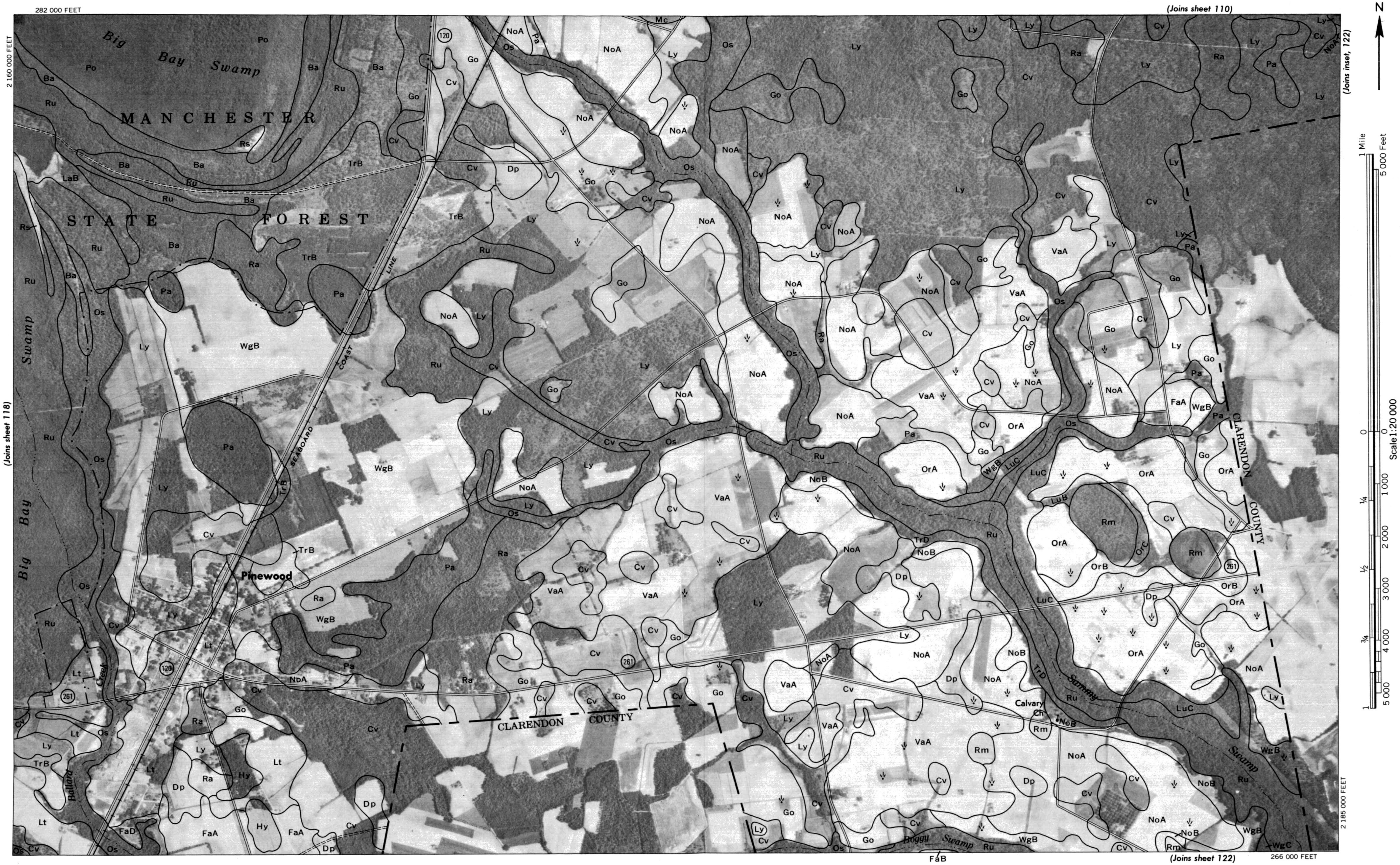
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 118

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

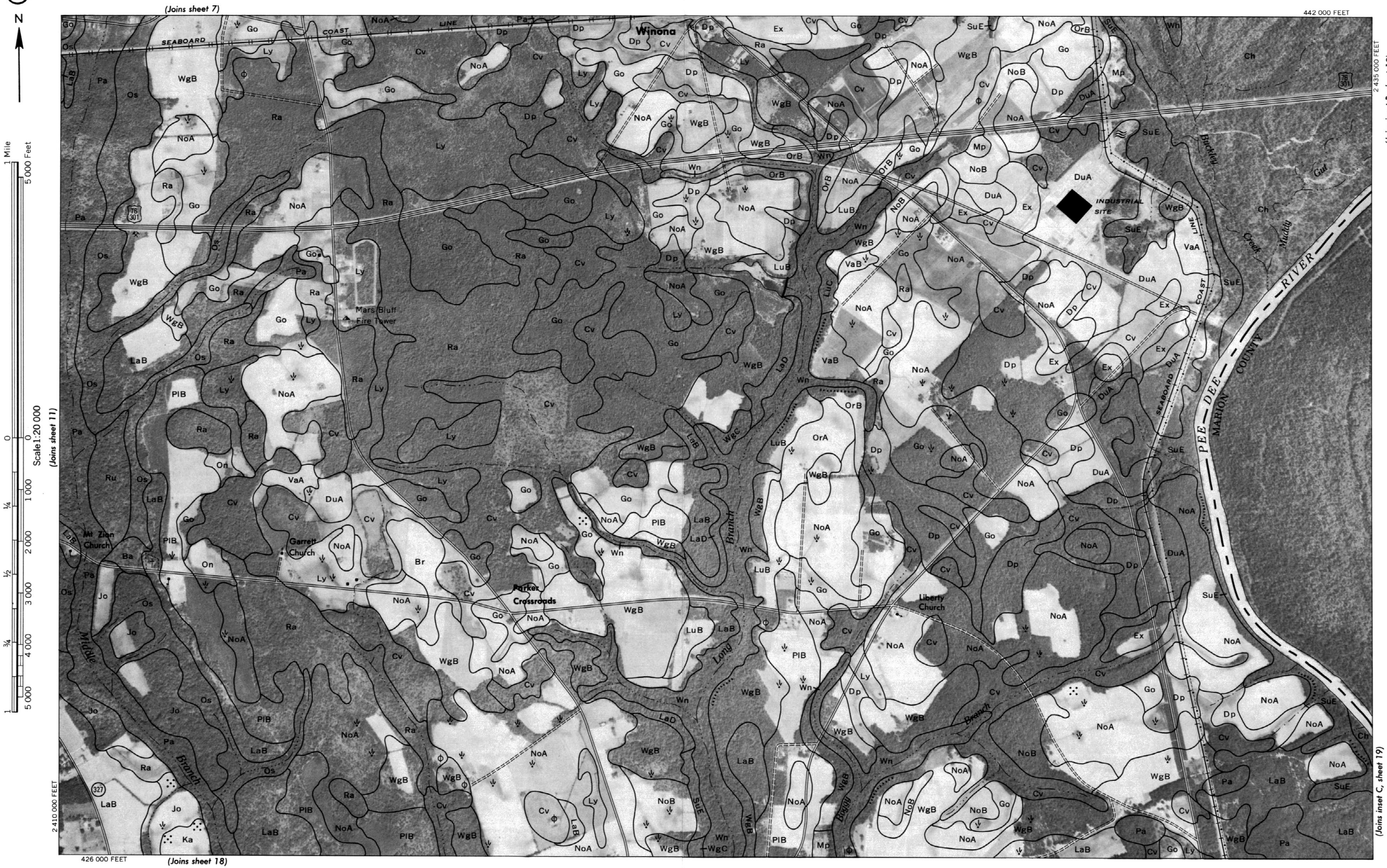
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 118

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 120

N

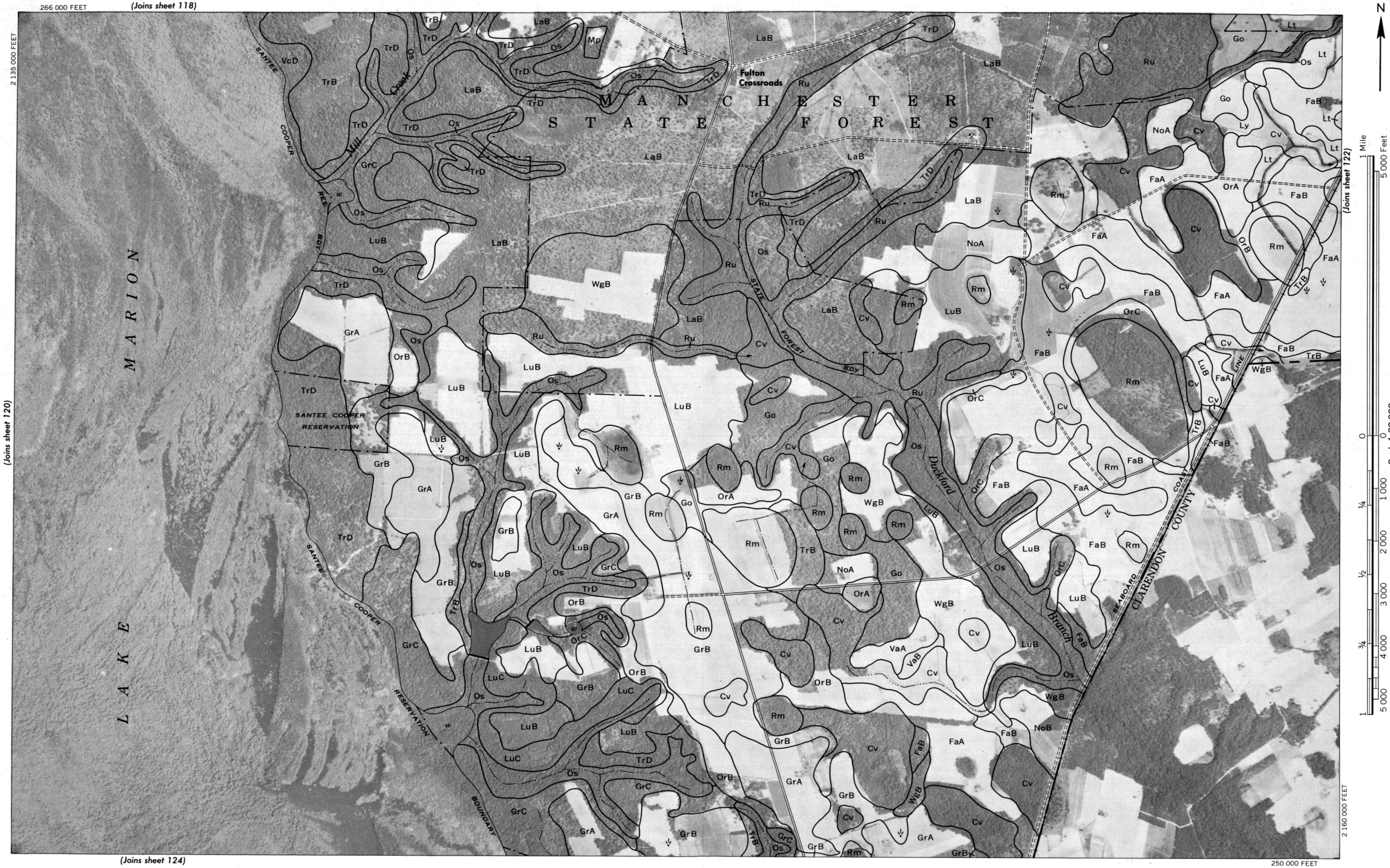
1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 120

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

121



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 121
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

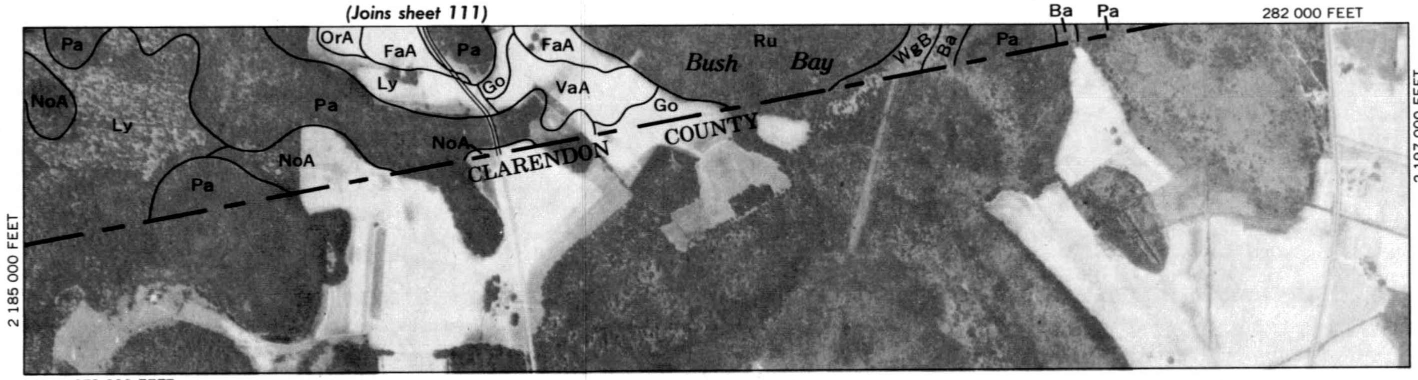
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 122

N

1 Mile
5 000 Feet

Scale 1:20 000



2 160 000 FEET

250 000 FEET

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 123

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 124

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 13

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

426 000 FEET

2 135 000 FEET

2 160 000 FEET

410 000 FEET

(Joins sheet 21)

N

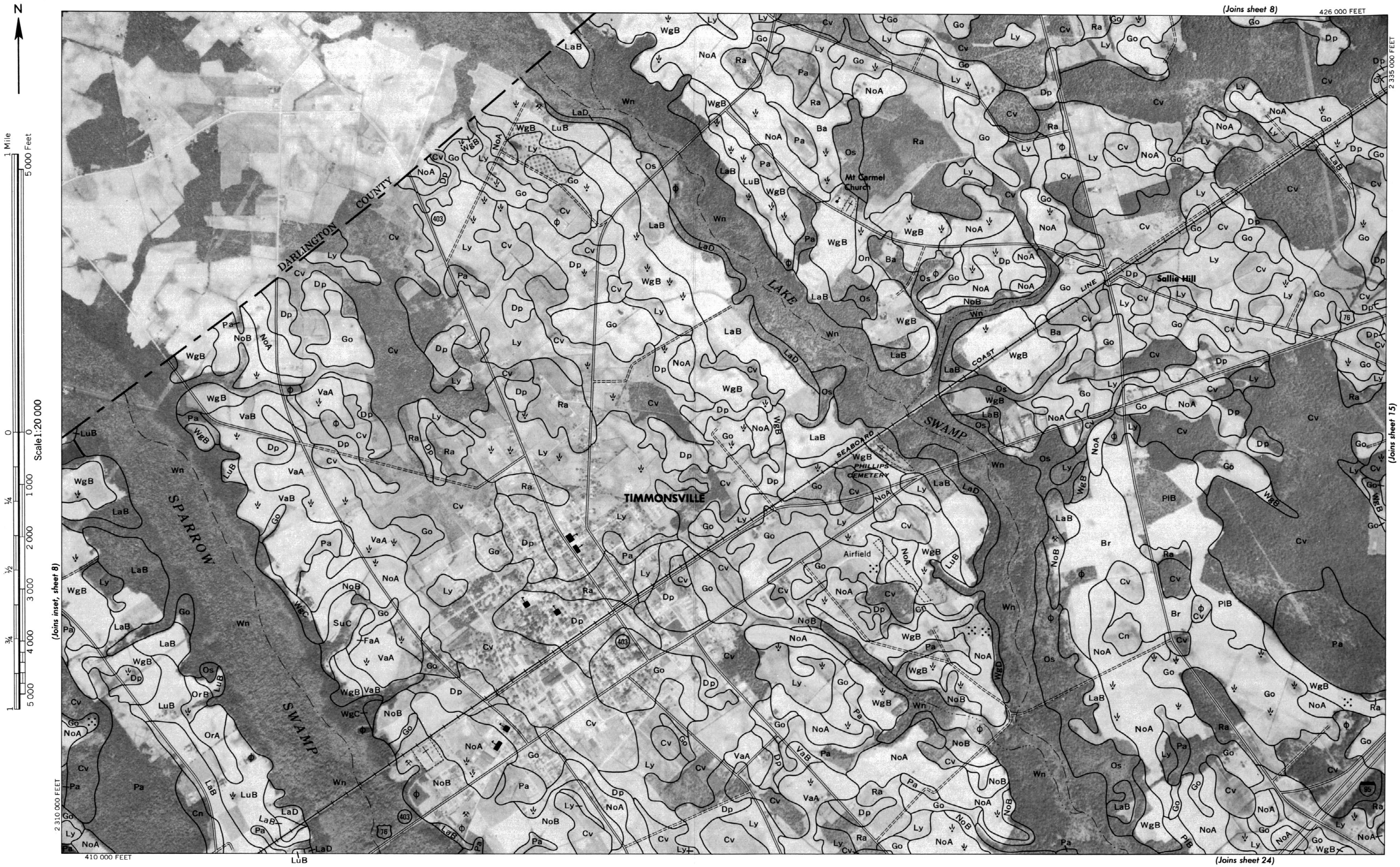
1 Mile — 5 000 Feet

Scale 1:20 000

0, ¼, ½, ¾, 1

0, 1 000, 2 000, 3 000, 4 000, 5 000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 15

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 16

N

Scale 1:20 000

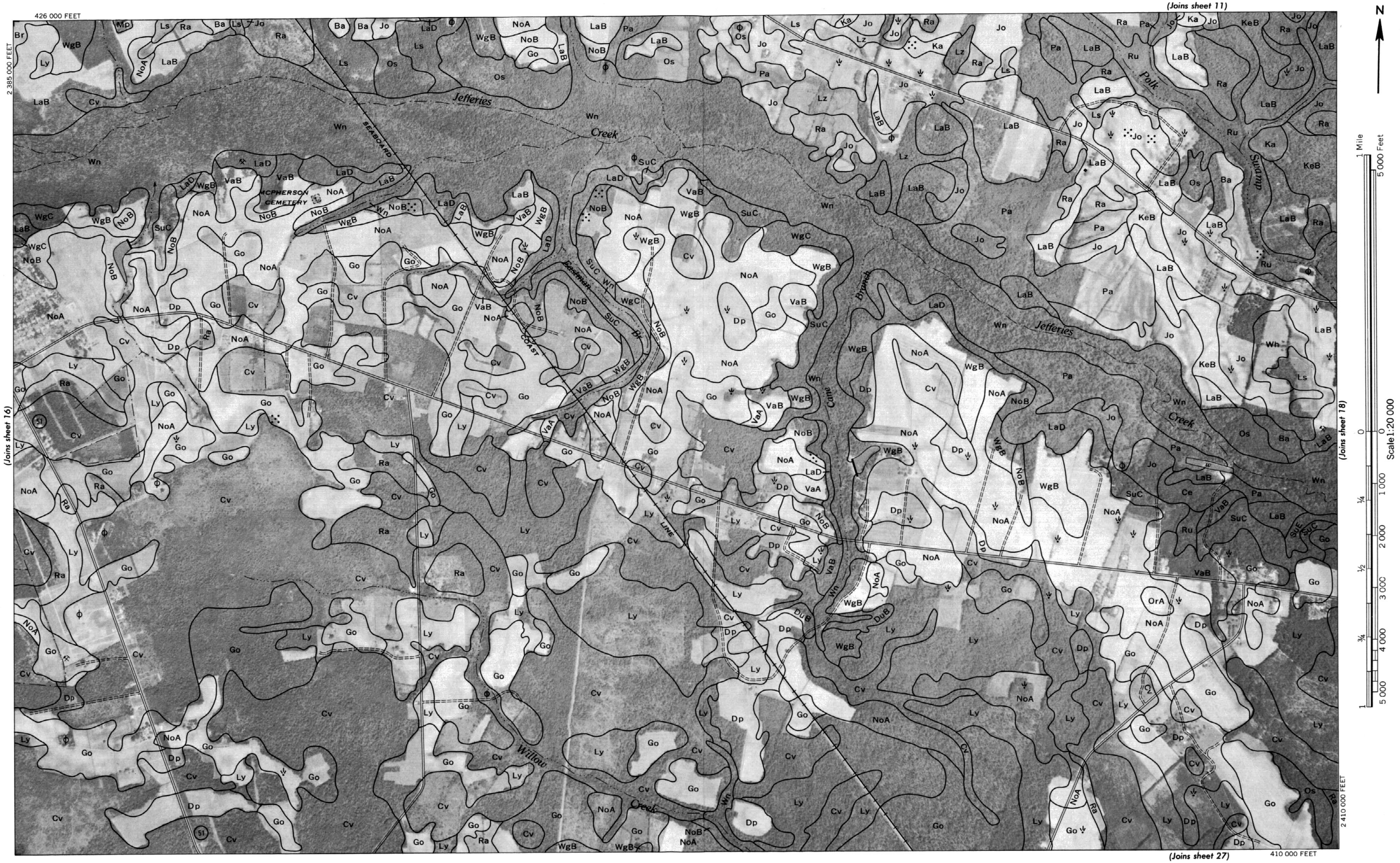
1 Mile — ¾ — ½ — ¼ — 0

5 000 Feet — 4 000 — 3 000 — 2 000 — 1 000 — 0 — 5 000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 16

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

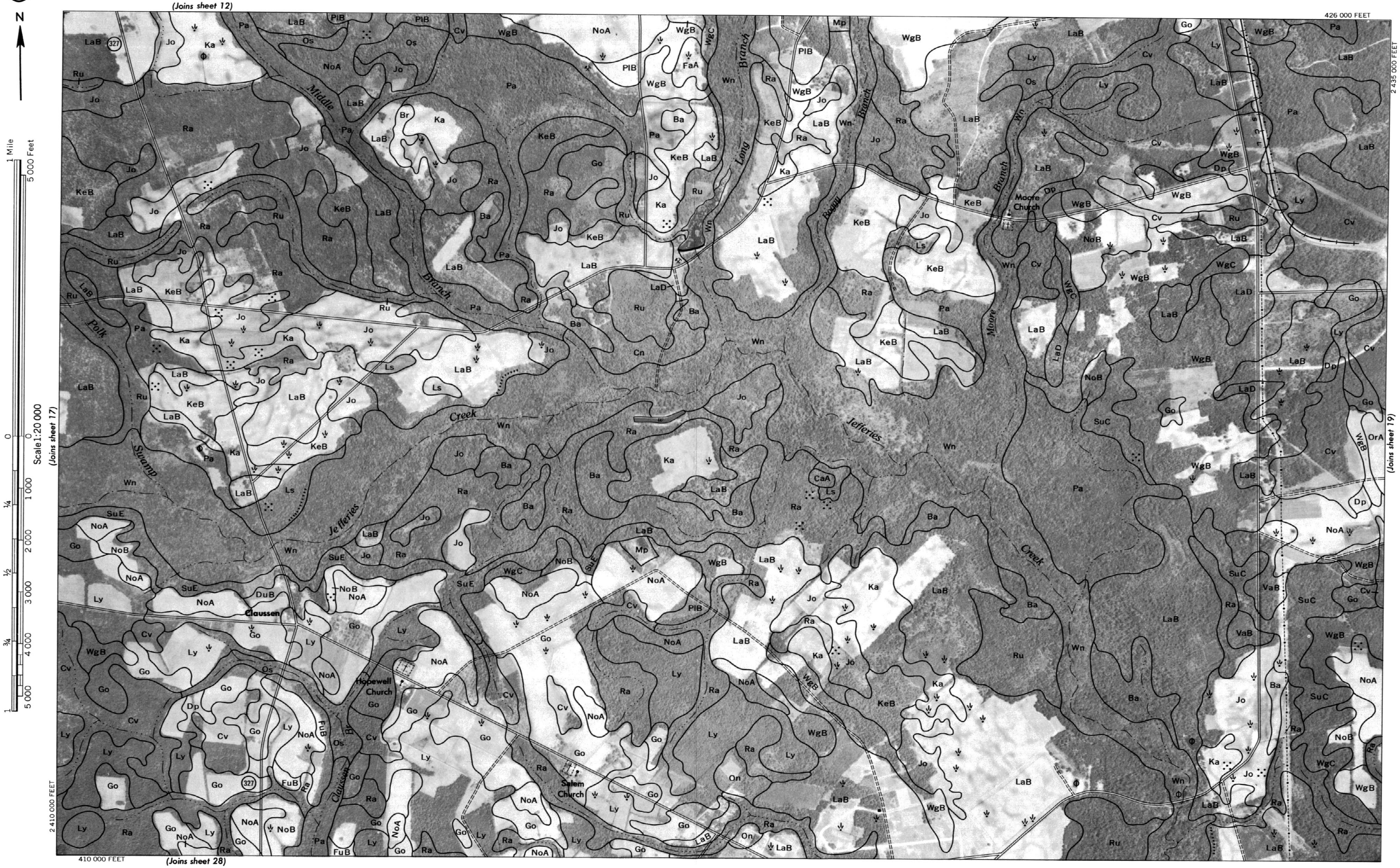


FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 17

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 18



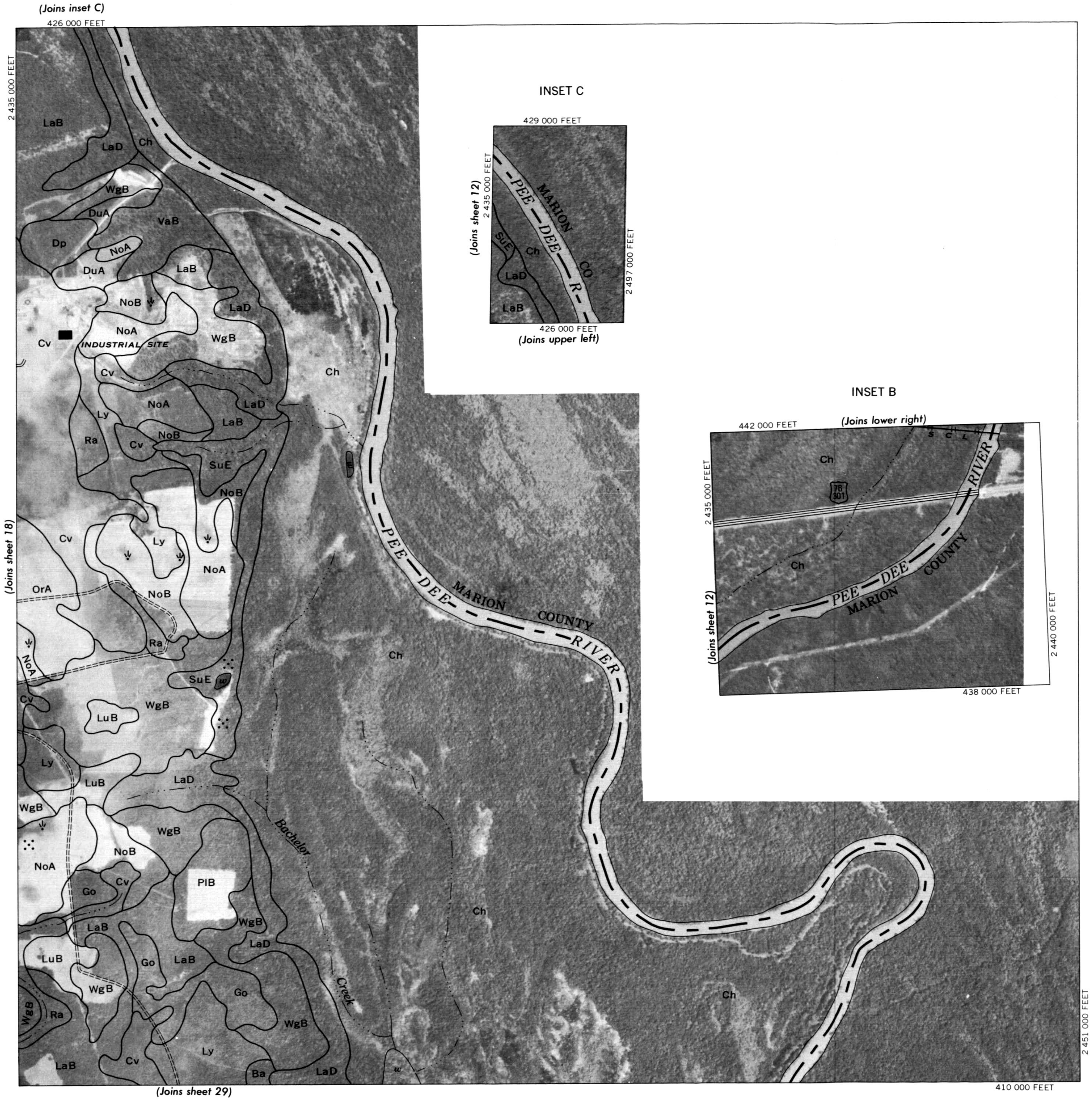
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

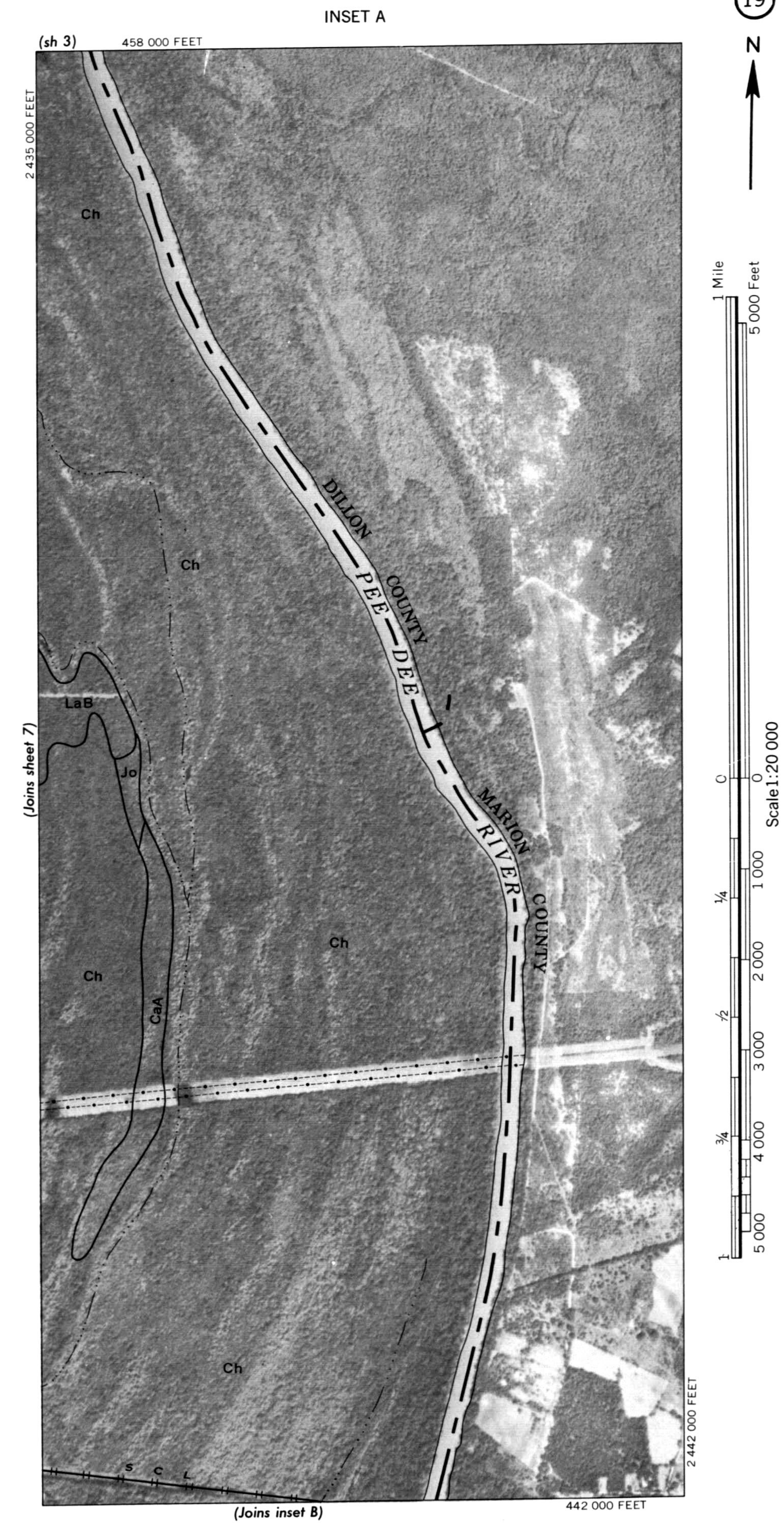
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 18

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 19

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.





Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 20

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

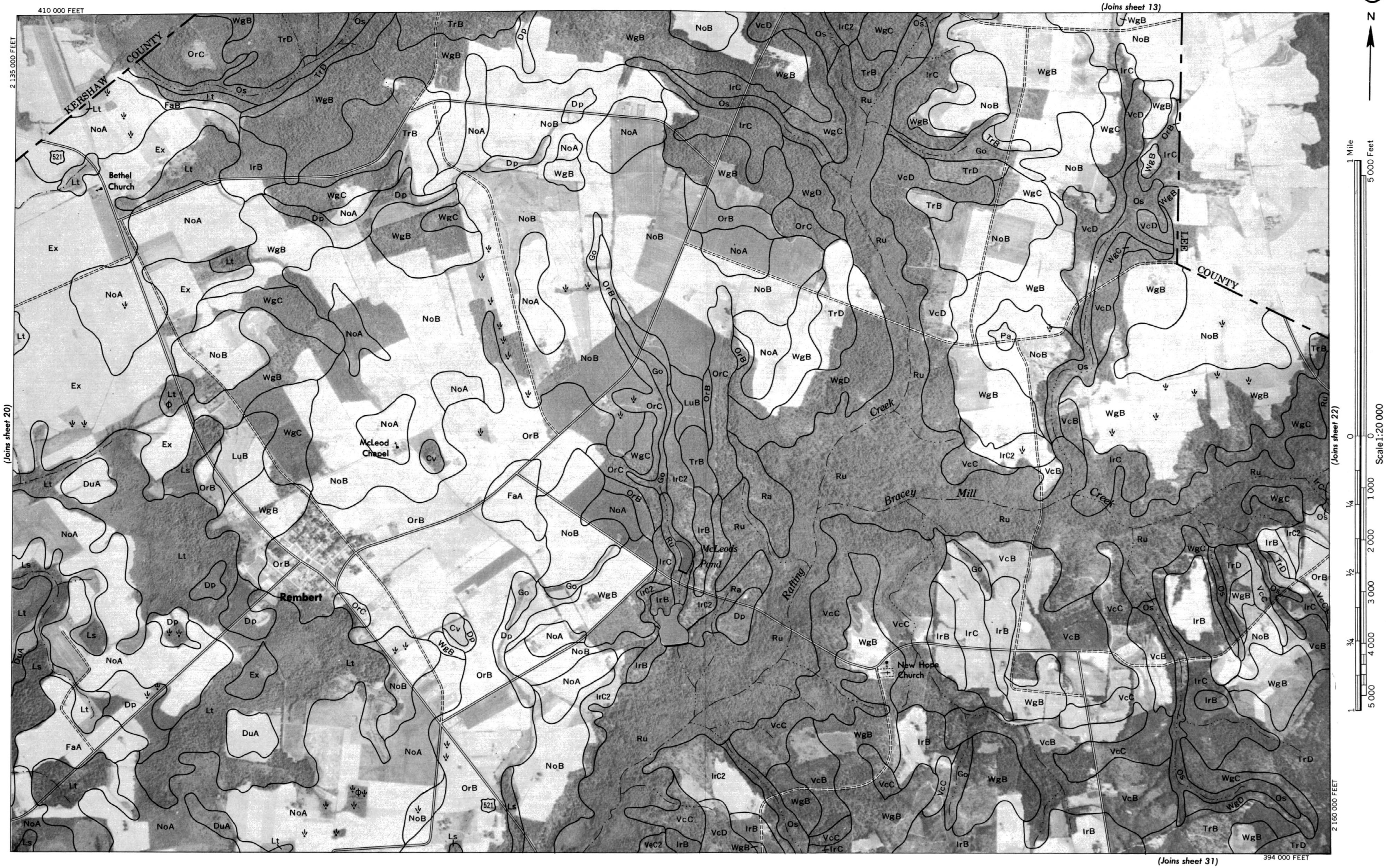
(Joins sheet 30)

(Joins sheet 21)

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 20

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 21

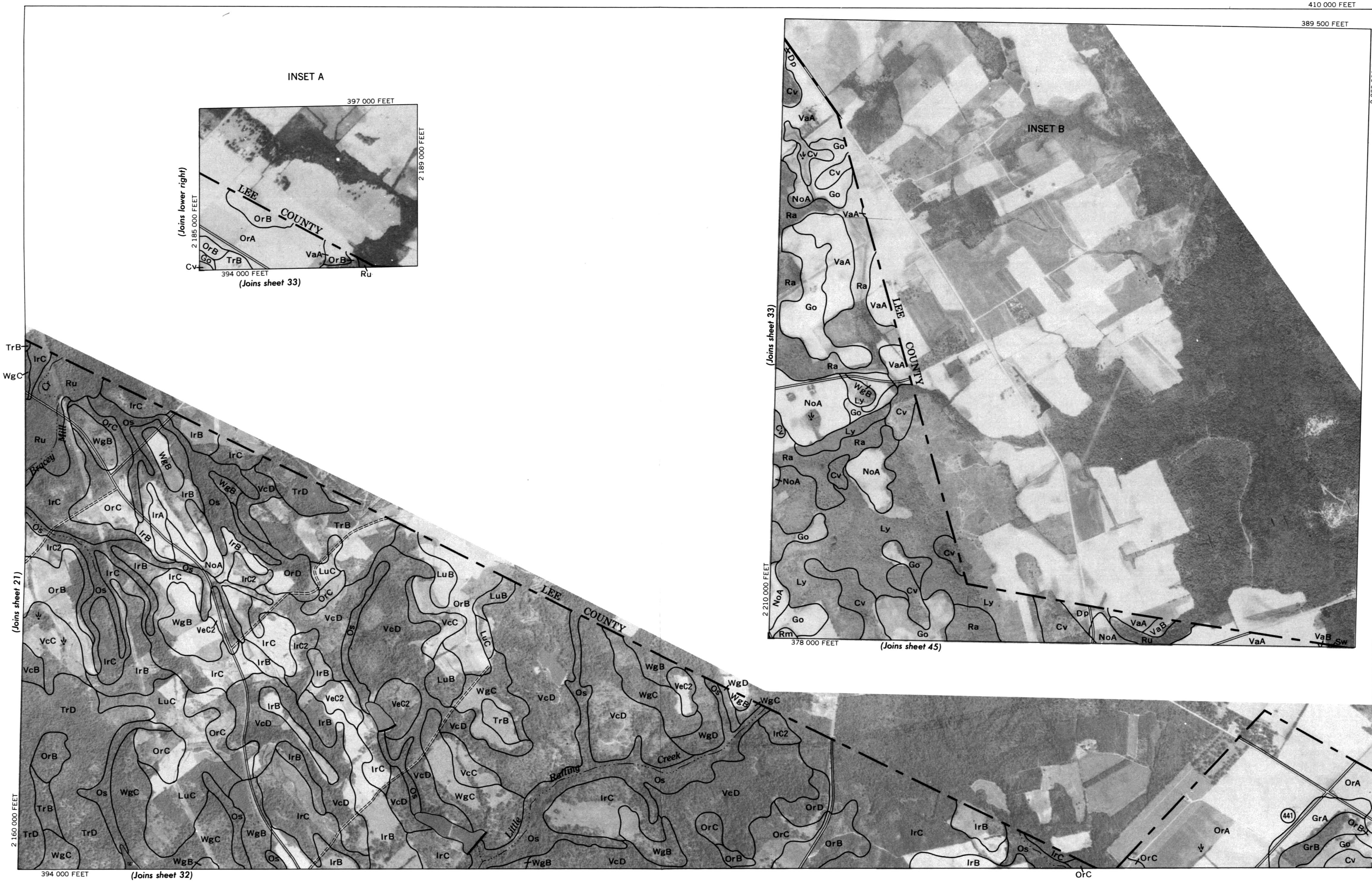
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

N

Scale 1:20 000

1 Mile 0 ¼ ½ ¾ 1

5 000 Feet 0 1 000 2 000 3 000 4 000 5 000

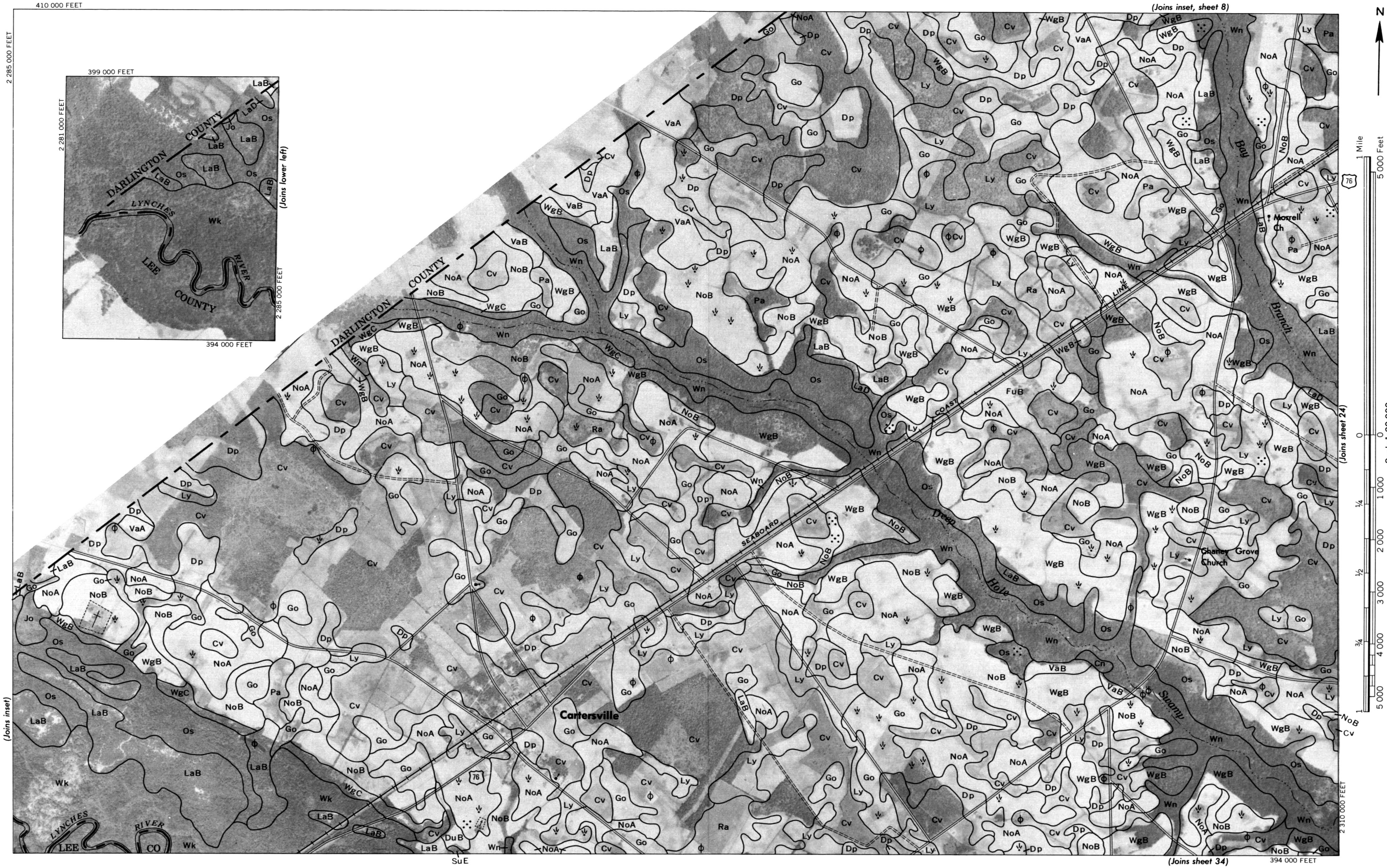


This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 23

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 24

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 24

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 25

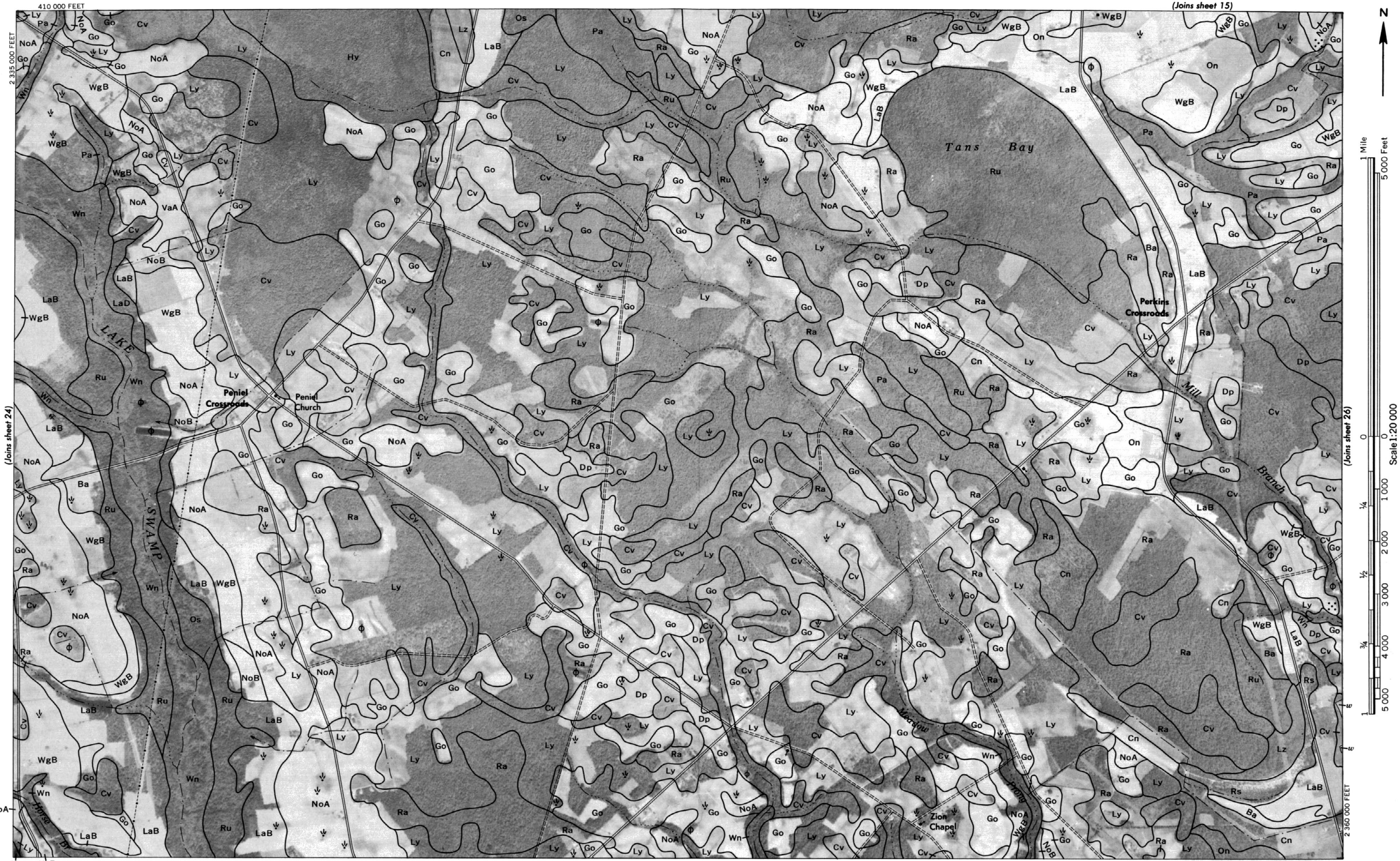
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

(Joins sheet 15)

(Joins sheet 24)

(Joins sheet 26)

(Joins sheet 36)

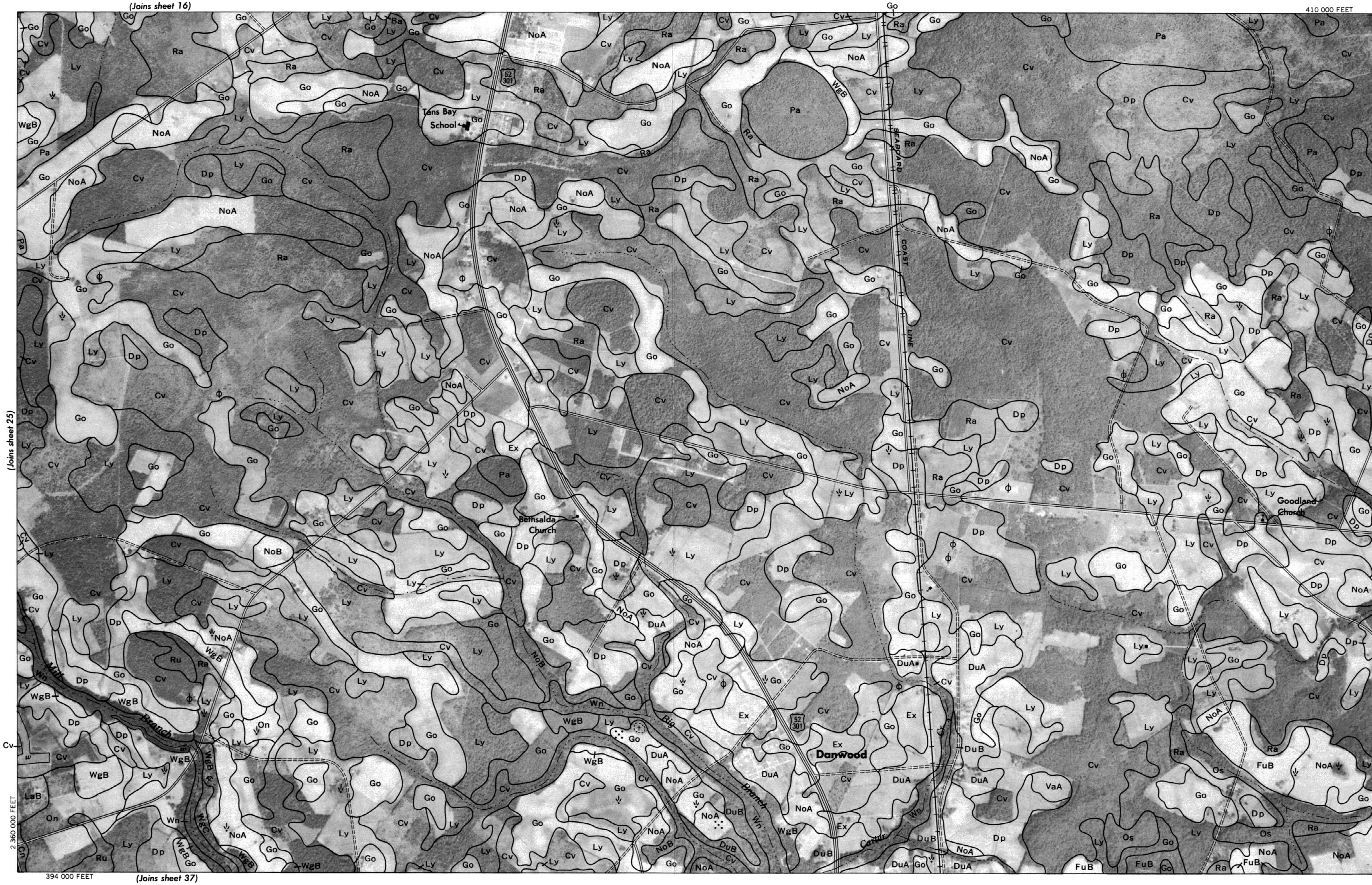


Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 26

N

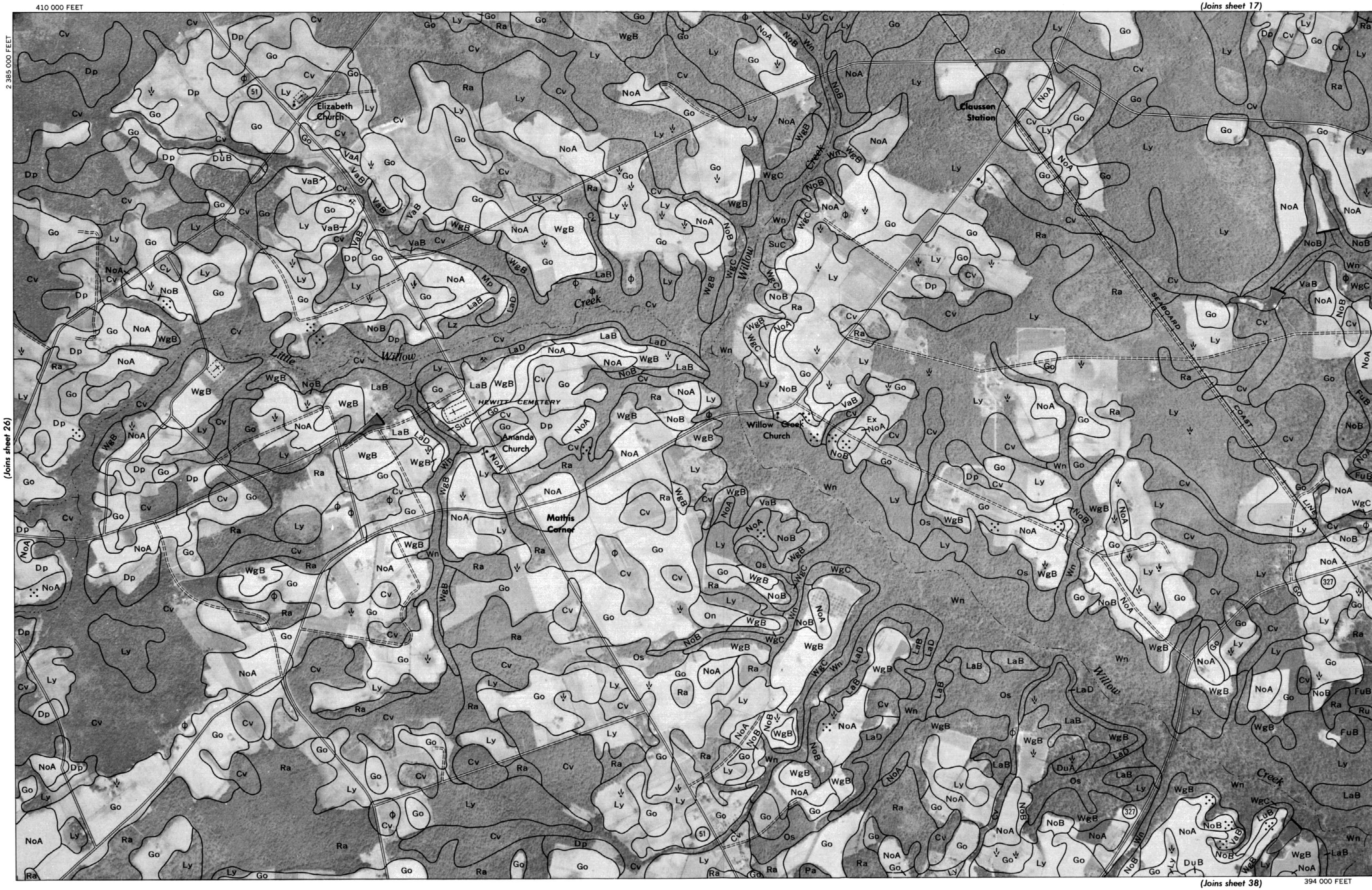
1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 26

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



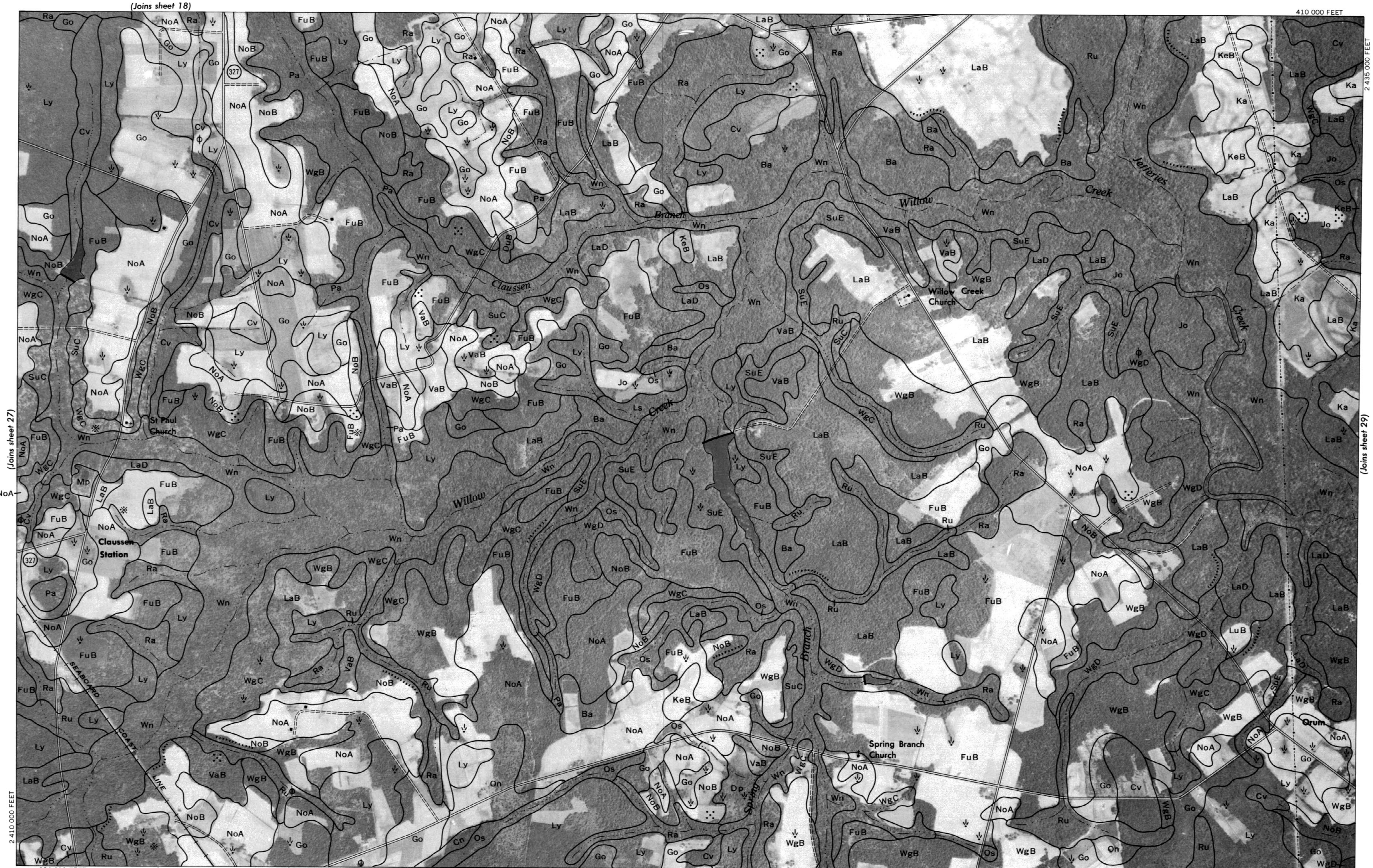
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 27

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

(Joins sheet 18)



1 Mile
5 000 Feet
Scale 1:20 000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 28

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

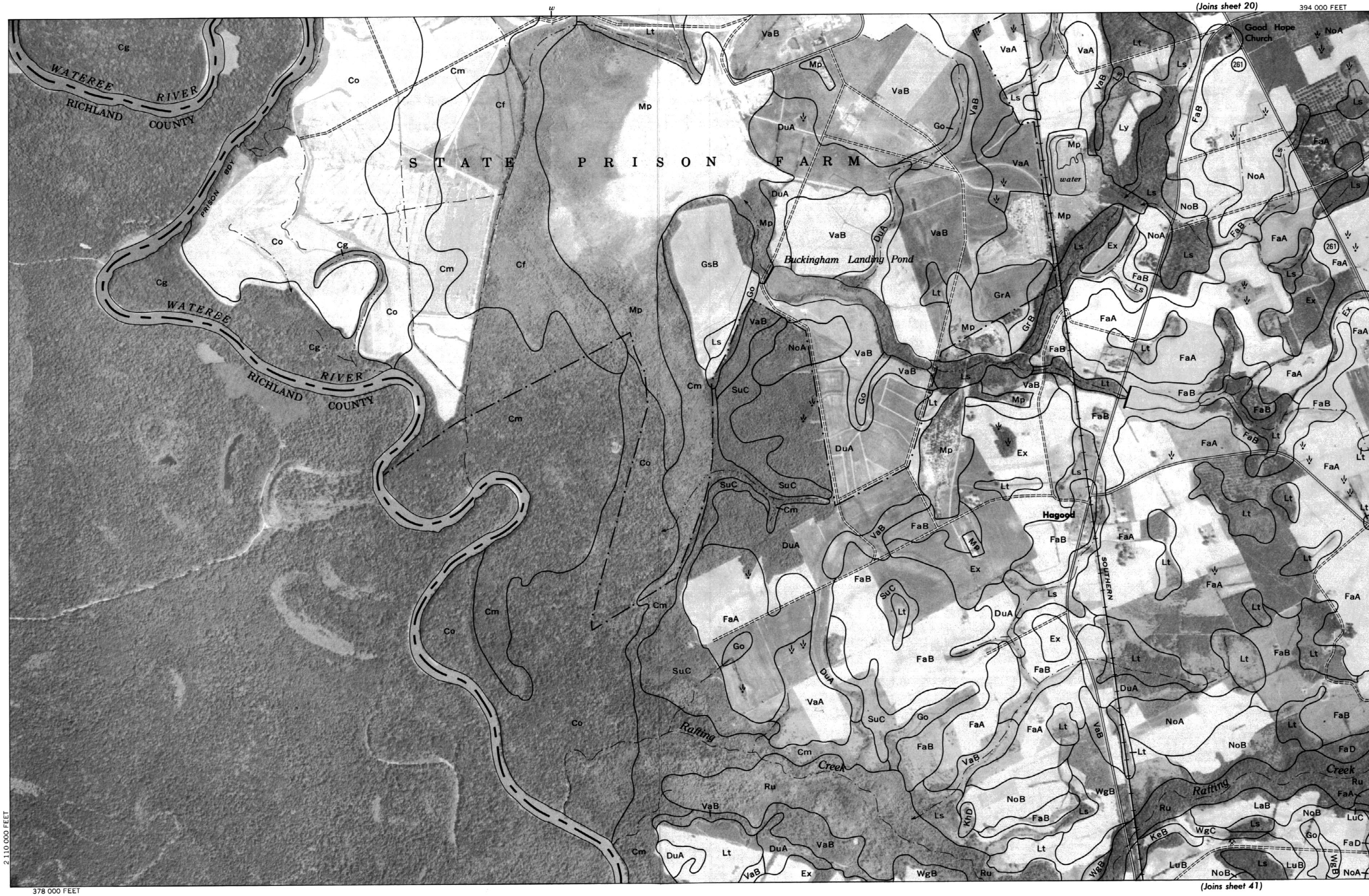
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 30

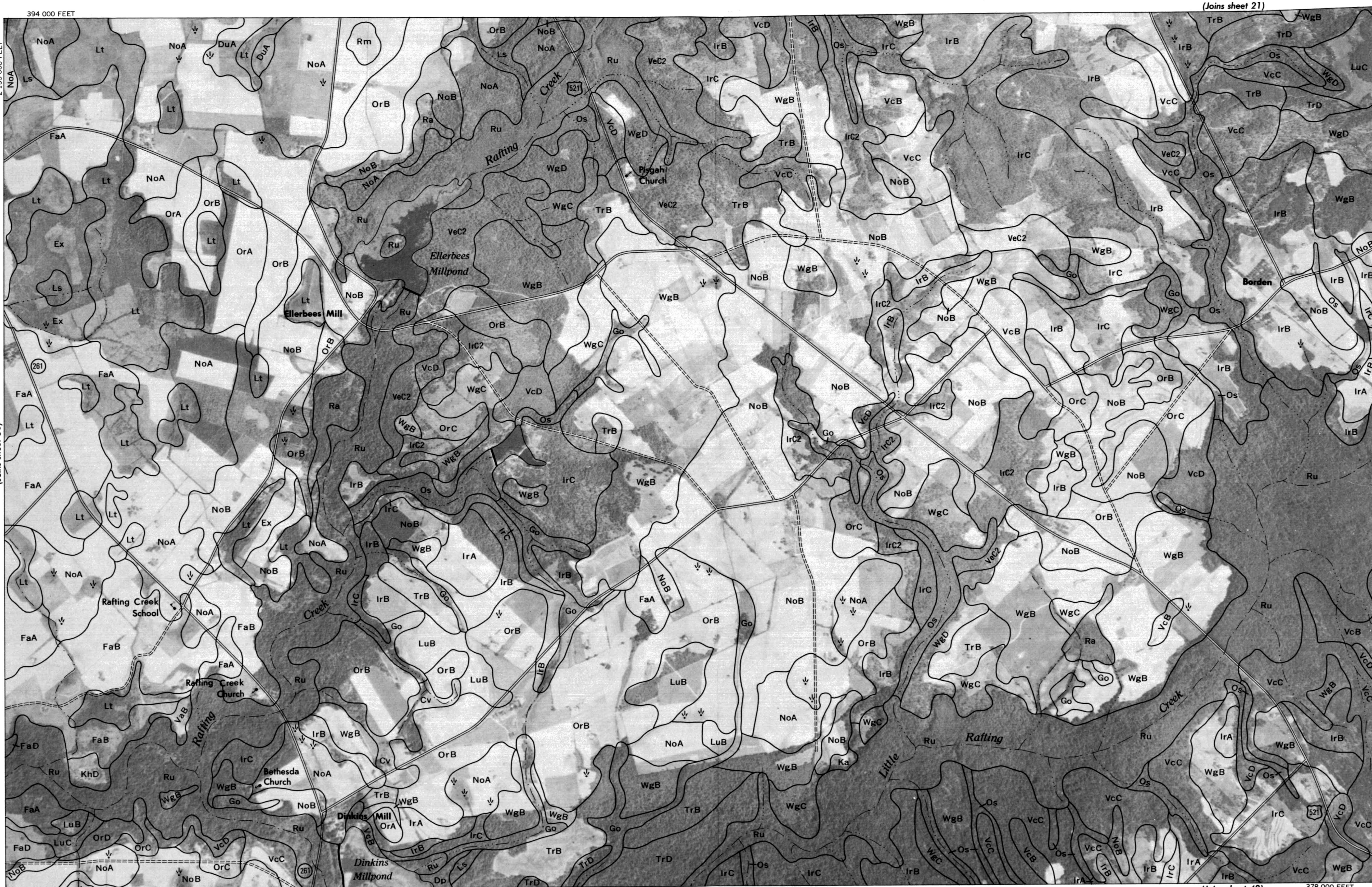
N

1 Mile
5 000 Feet
0
0
Scale 1:20 000
¼
1 000
2 000
½
3 000
¾
4 000
5 000
1



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

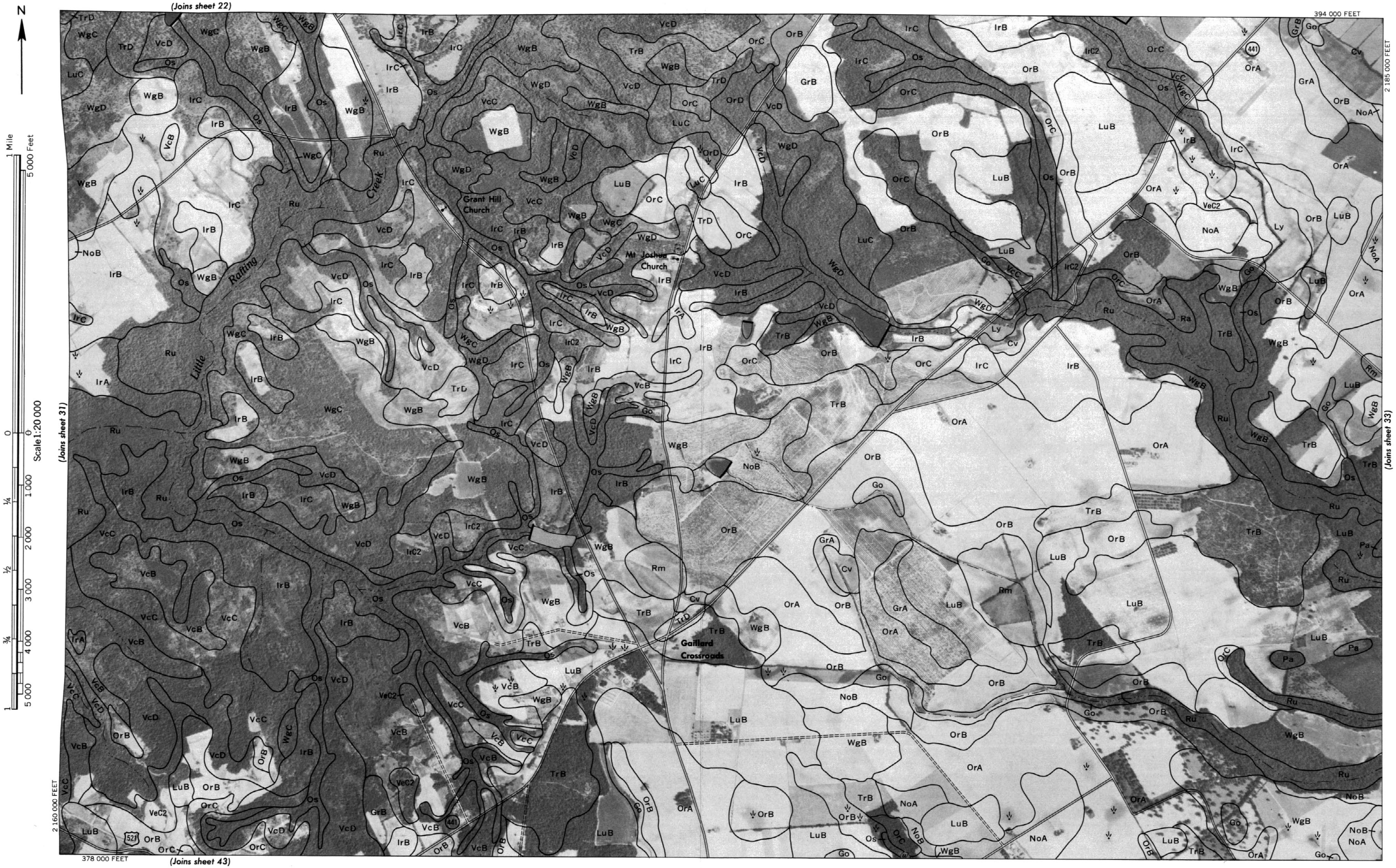


1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 31

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

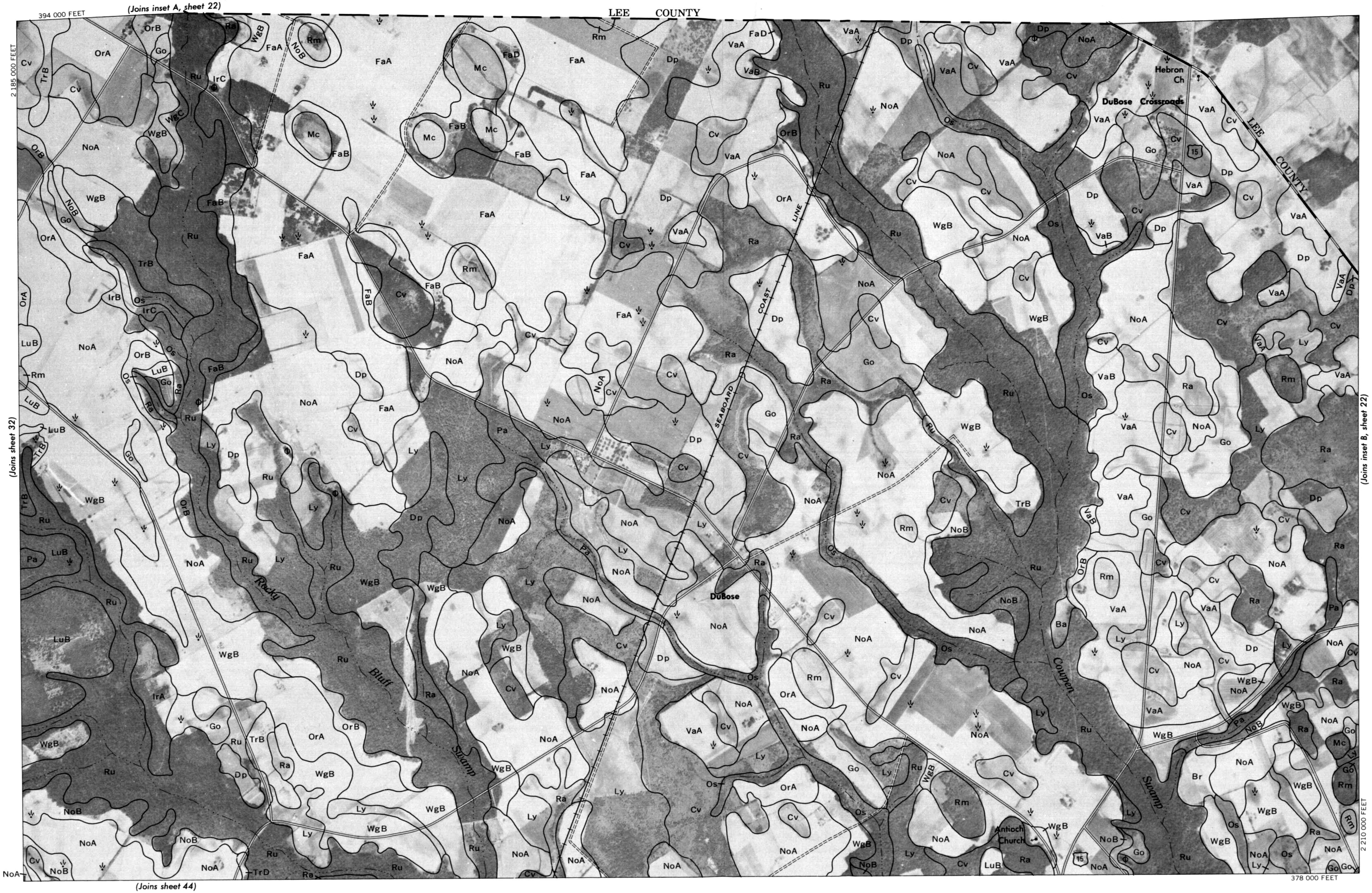


This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 33

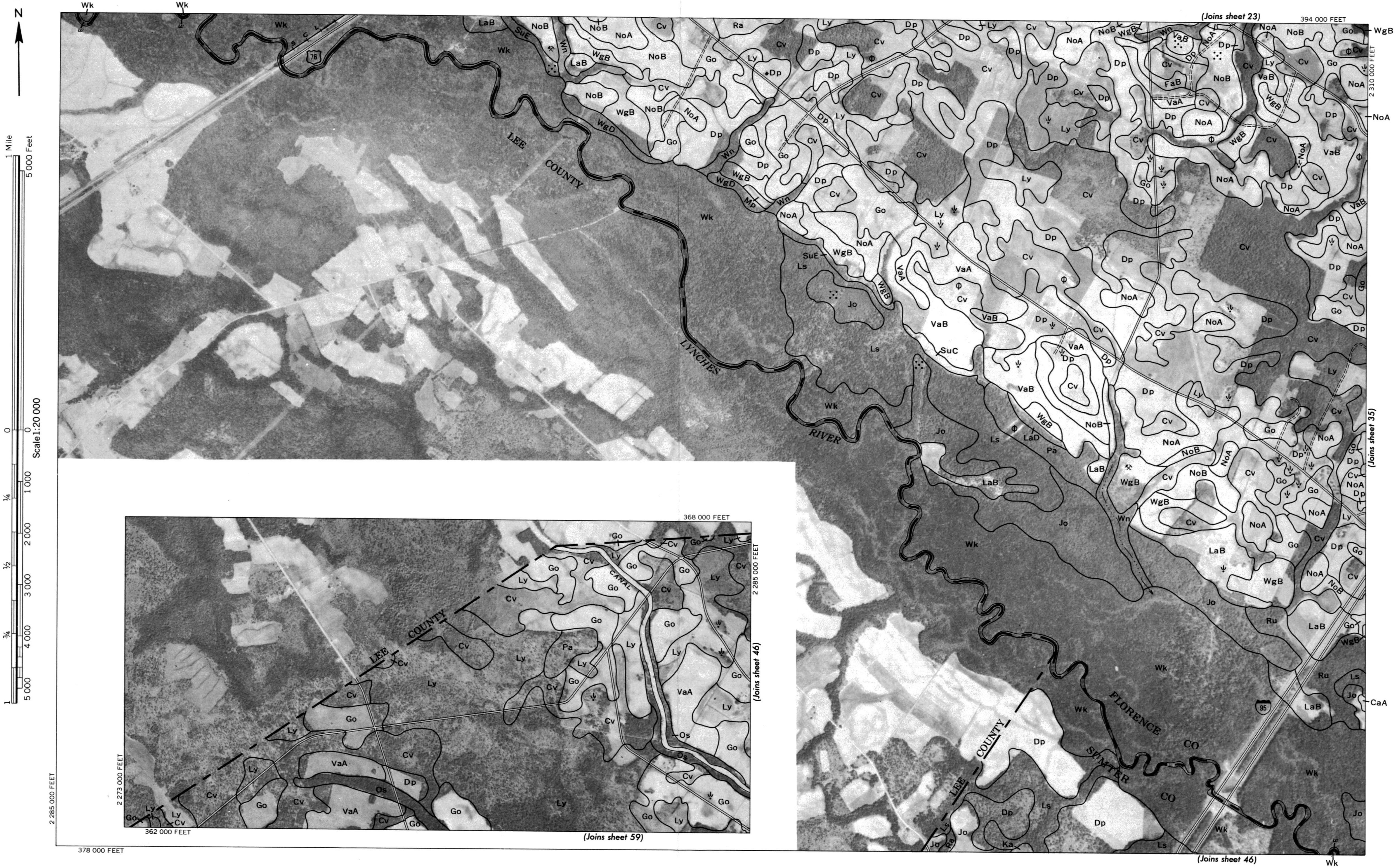
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

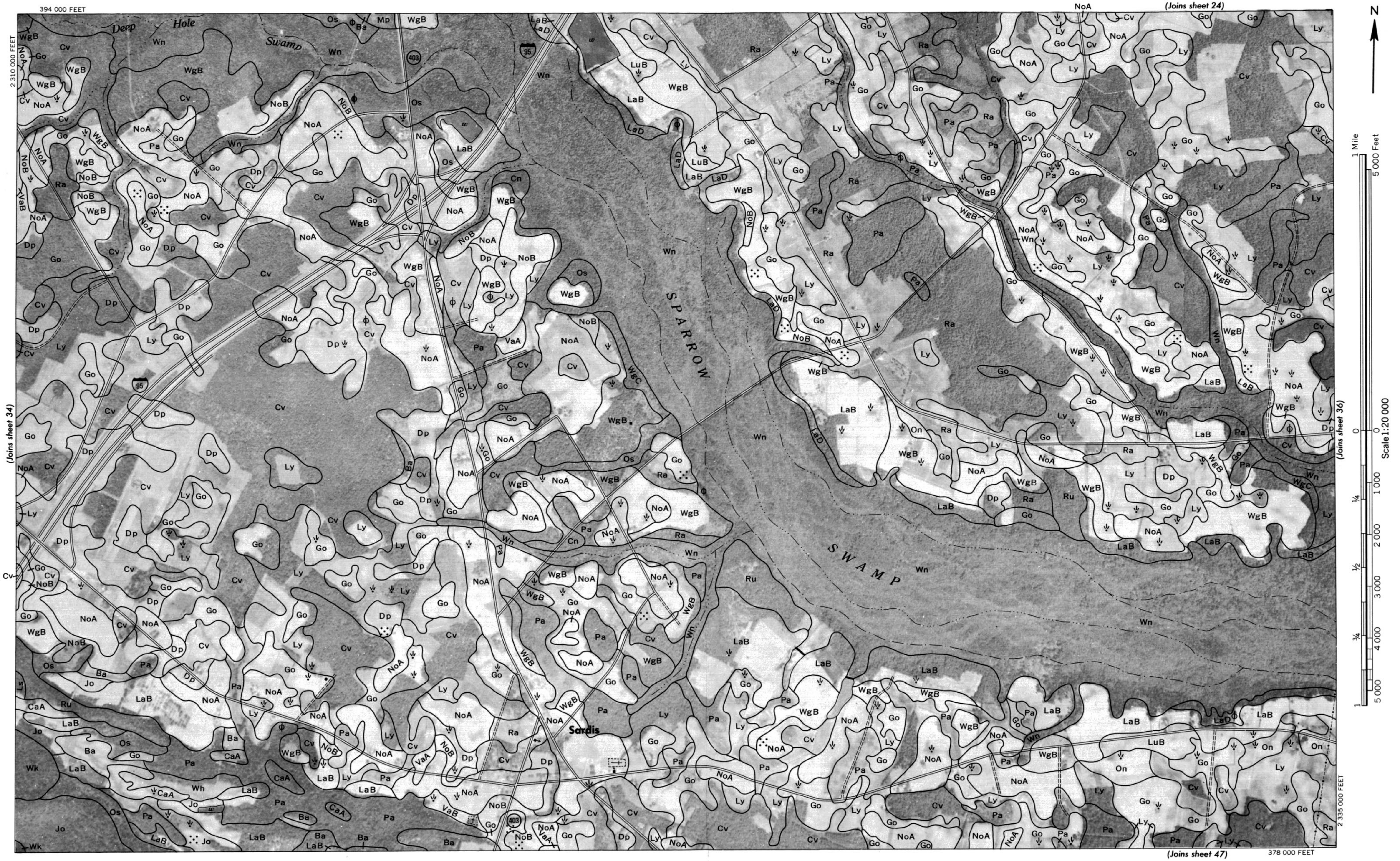
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 34

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

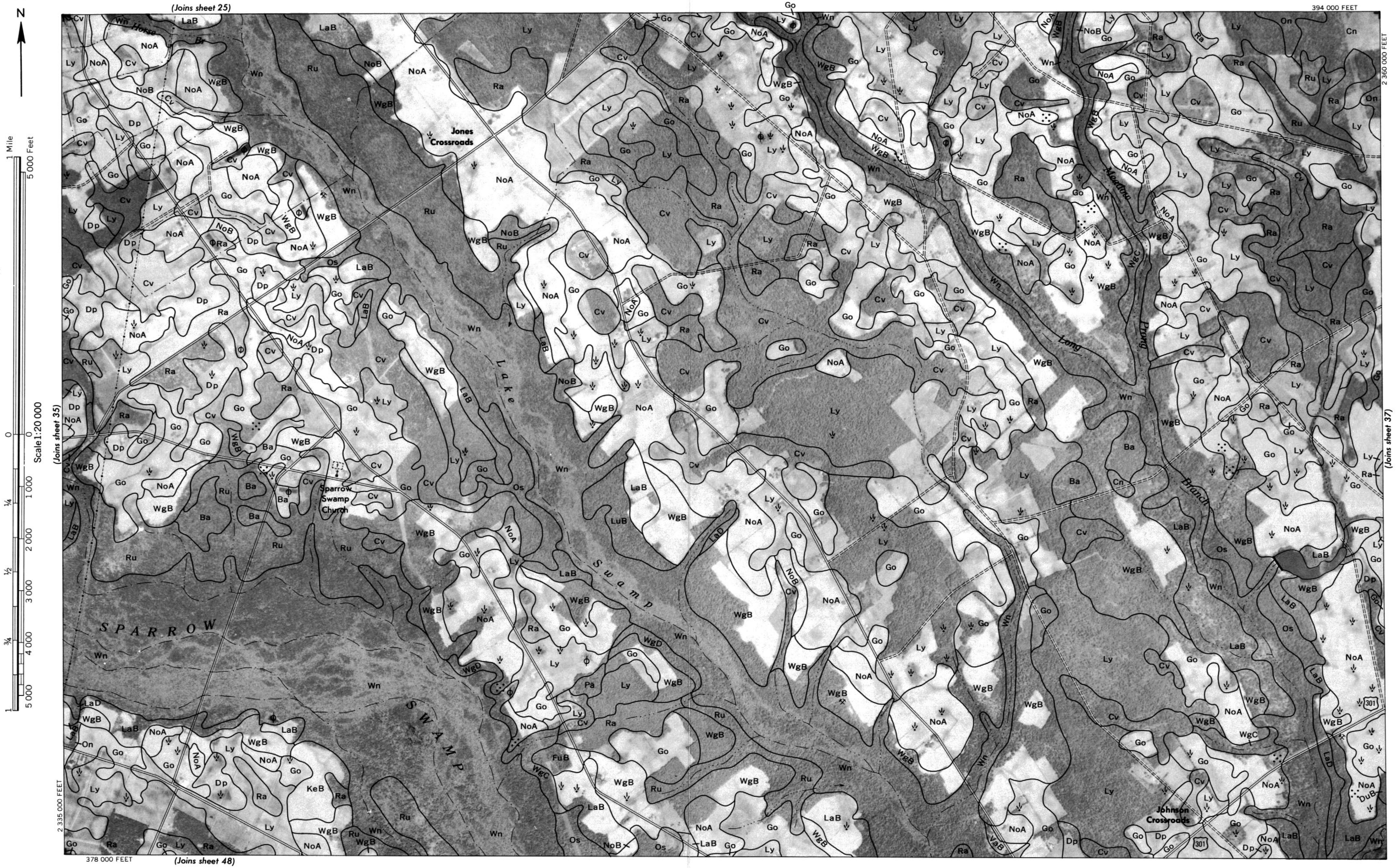


FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 35

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

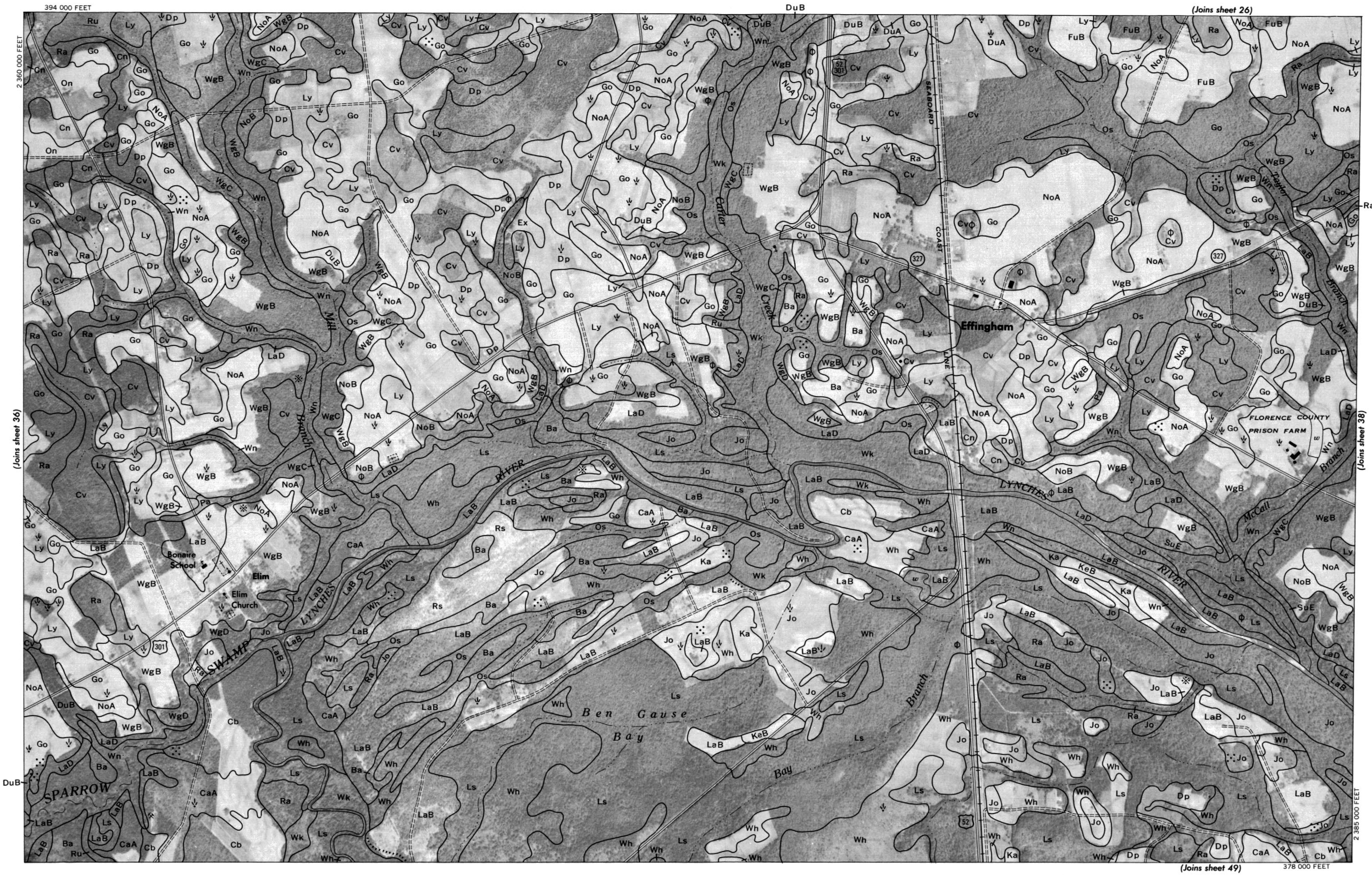
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 36



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 36

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 37

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

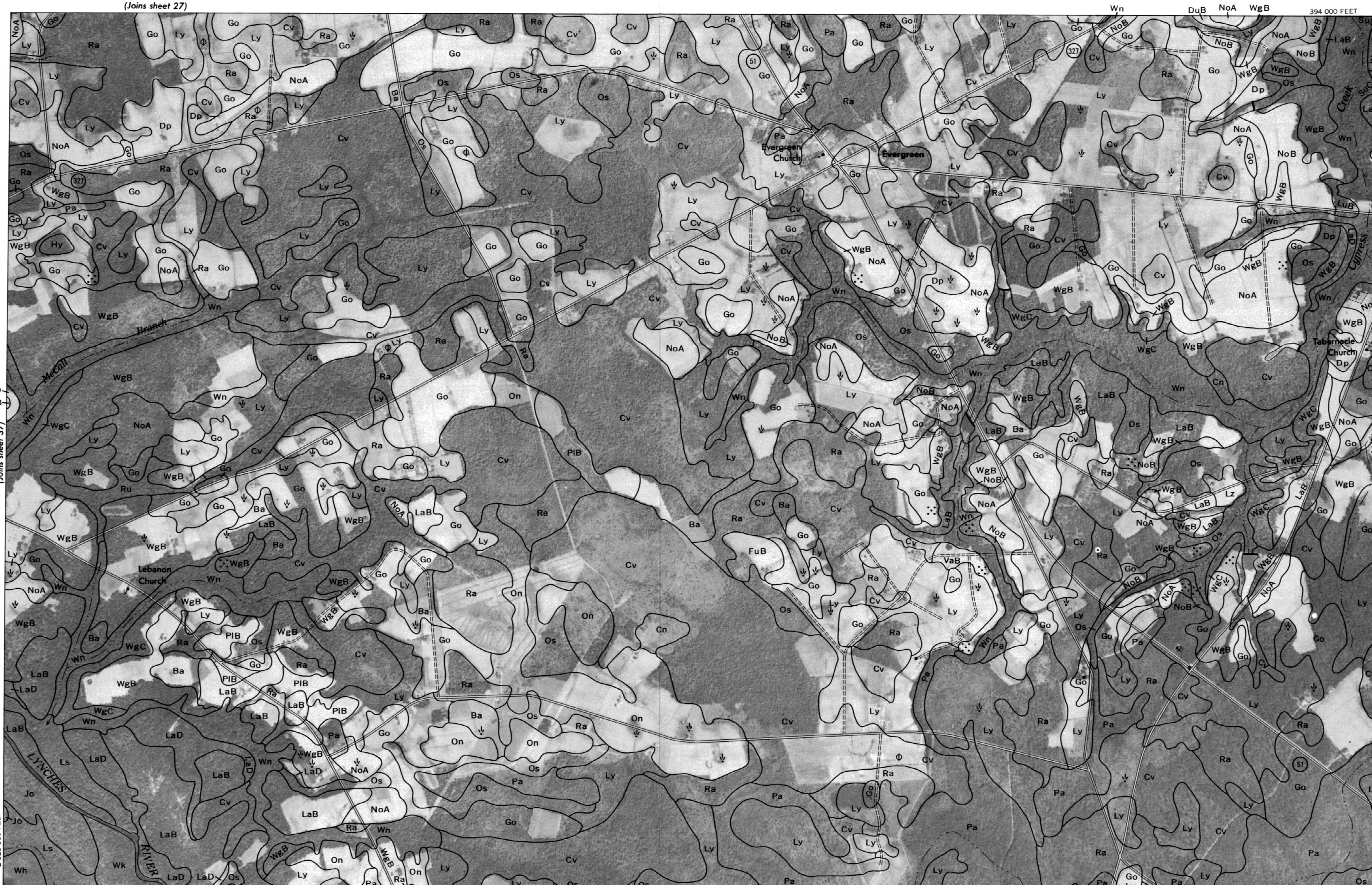
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 38

N

1 Mile
5 000 Feet
Scale 1:20 000
0 1000 2000 3000 4000 5000
0 ¼ ½ ¾ 1

(Joins sheet 27)



(Joins sheet 50)

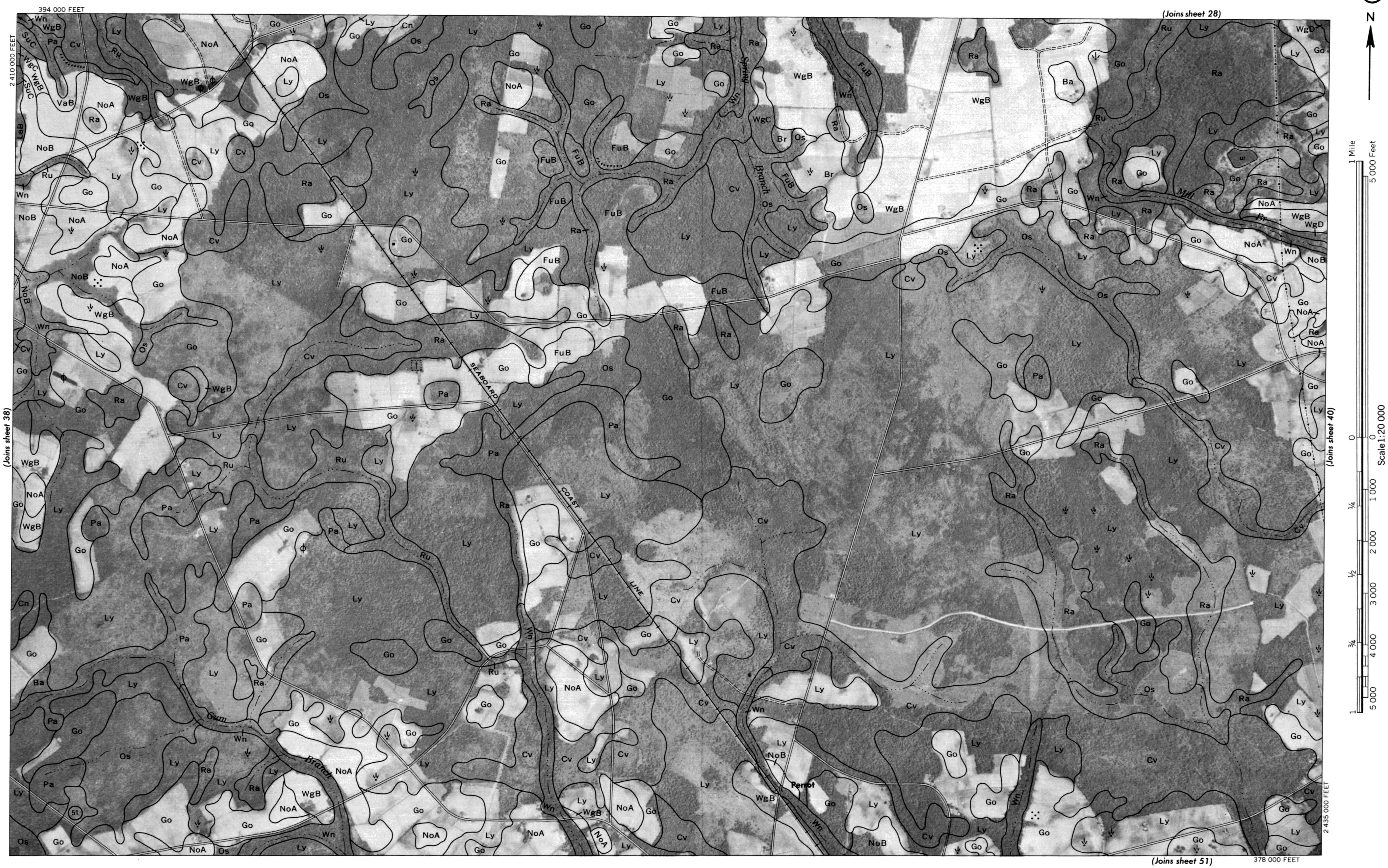
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 38

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 39

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

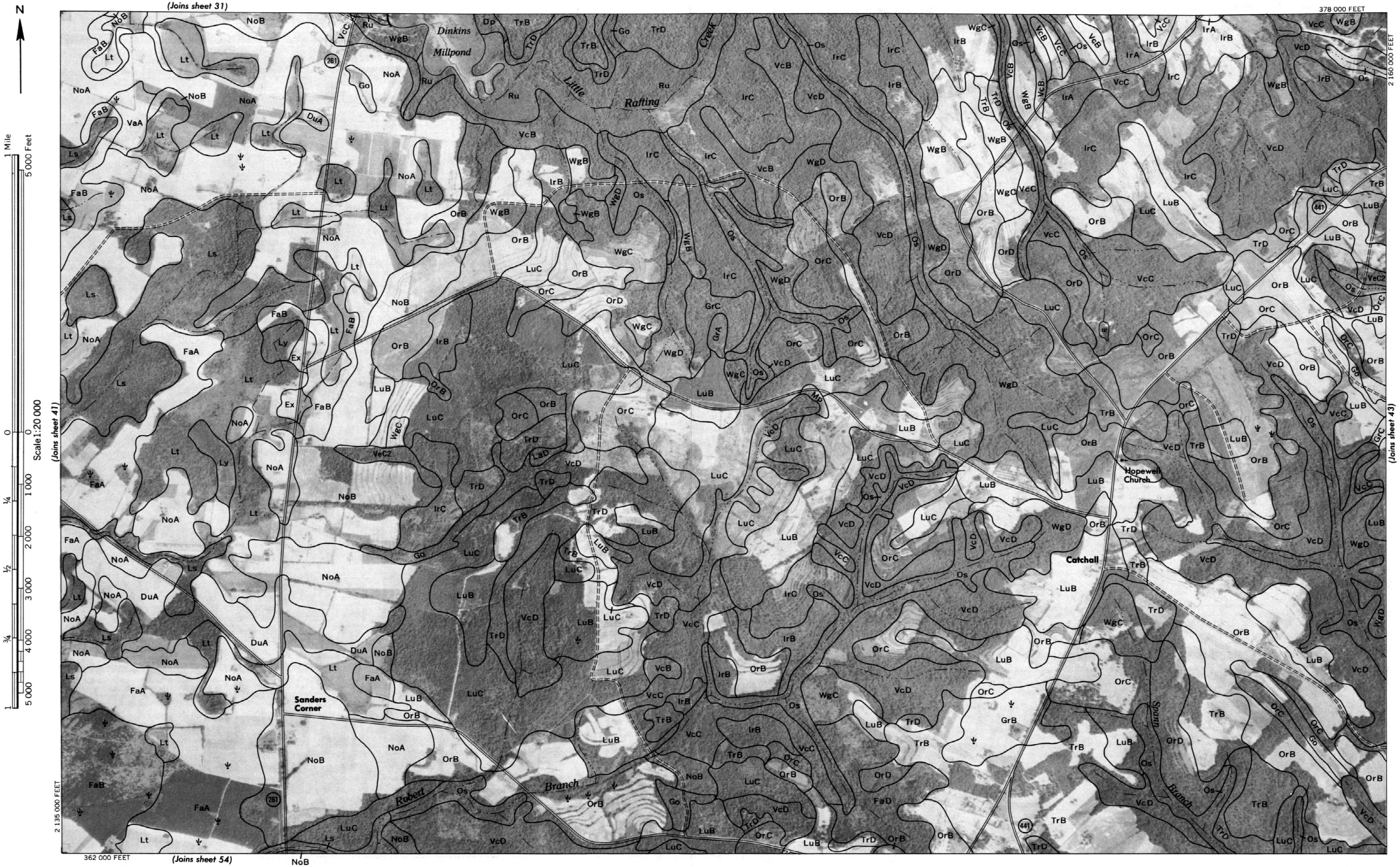
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 42



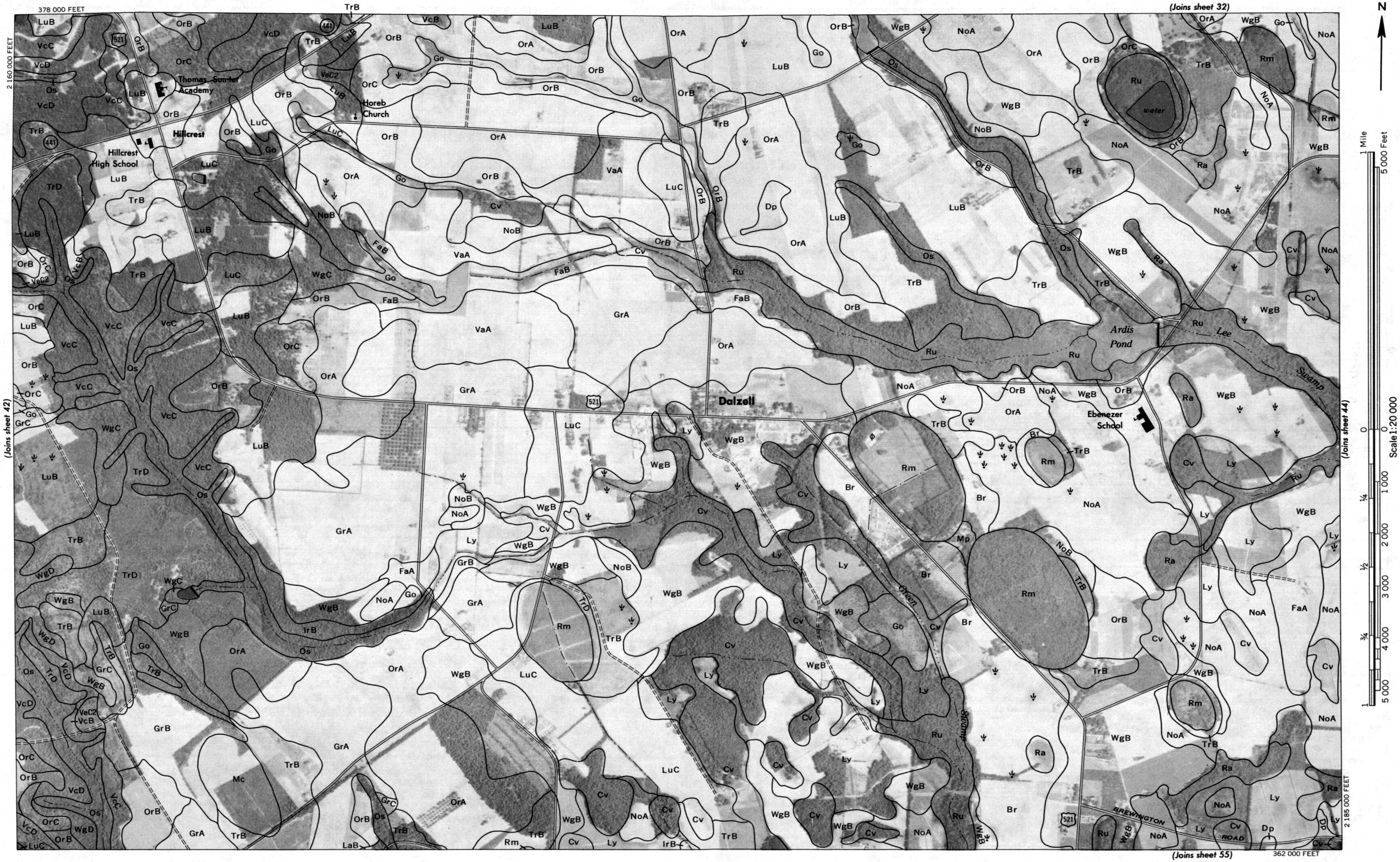
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 42

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 43

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

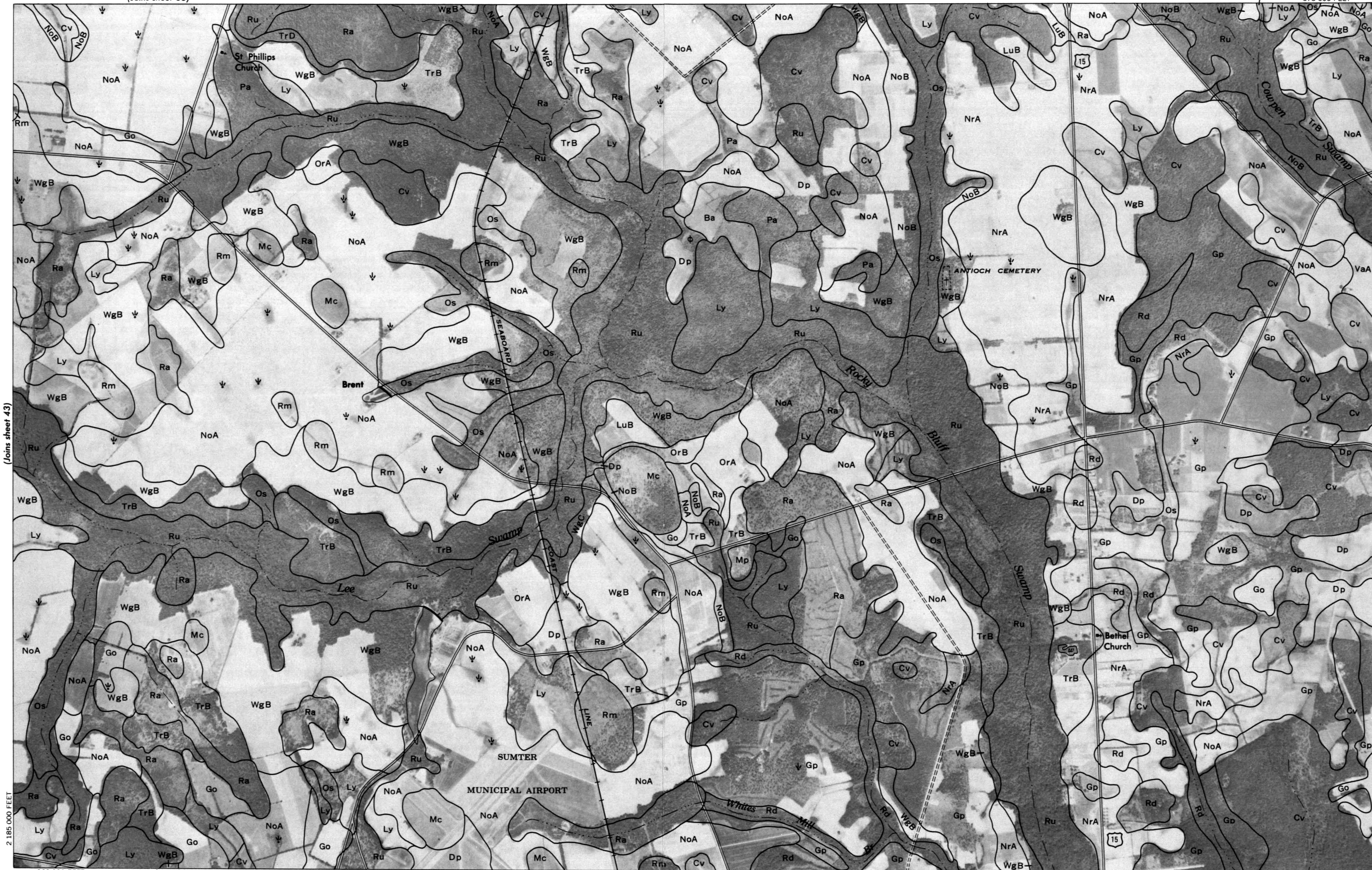


Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 44

N

1 Mile
5 000 Feet
Scale 1:20 000



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 44

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

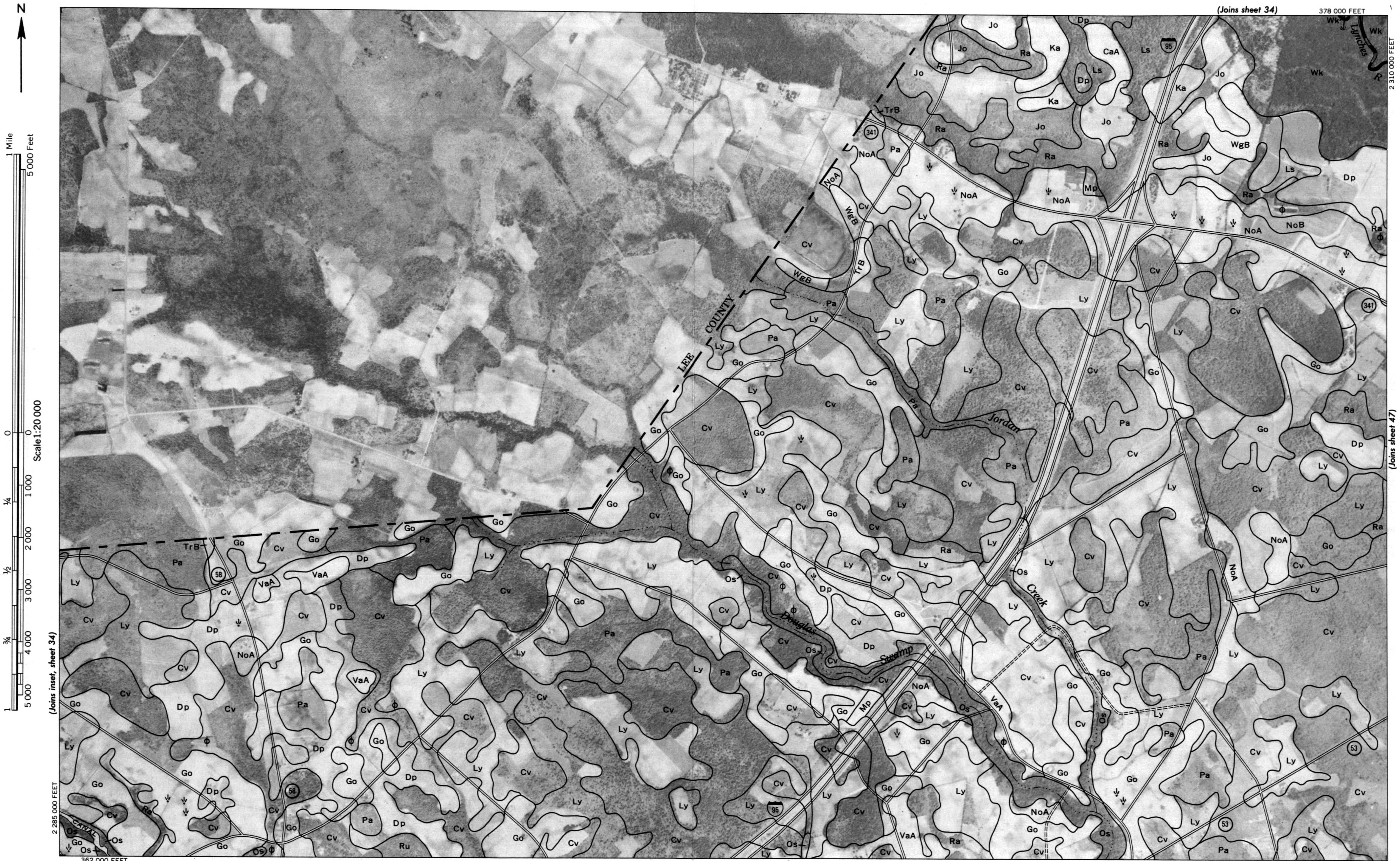
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 45

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

N

1 Mile
5 000 Feet
0
1000
2000
3000
4000
5000
0
¼
½
¾
1
Scale 1:20 000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 46

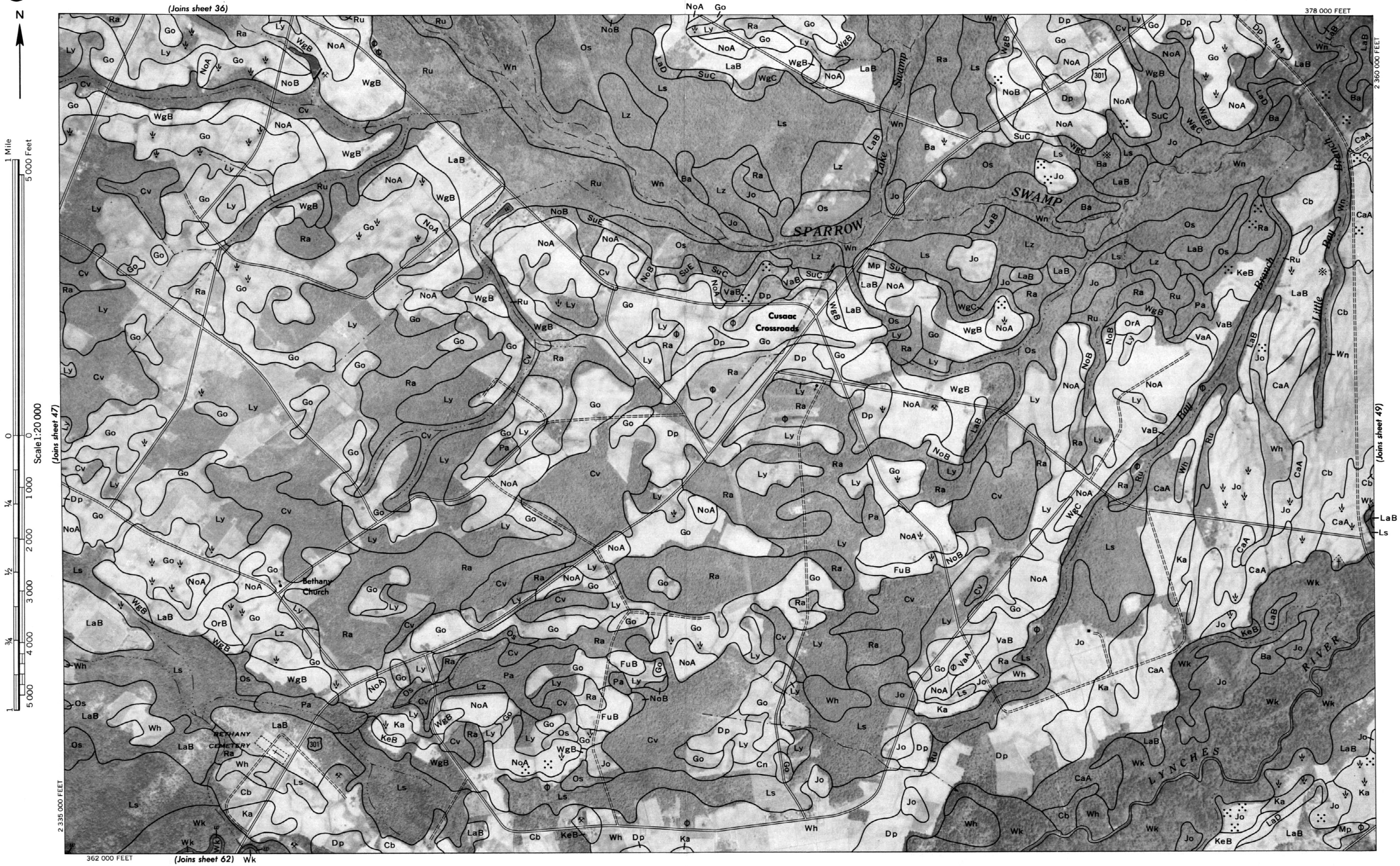
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 47

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 48



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 48

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 49

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

(Joins sheet 38)

378 000 FEET

2 410 000 FEET

1 Mile

5 000 Feet

Scale 1:20 000

0 ¼ ½ ¾ 1

0 1 000 2 000 3 000 4 000 5 000

(Joins sheet 49)

(Joins sheet 51)

2 385 000 FEET

362 000 FEET

(Joins sheet 64)

Wk

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 51

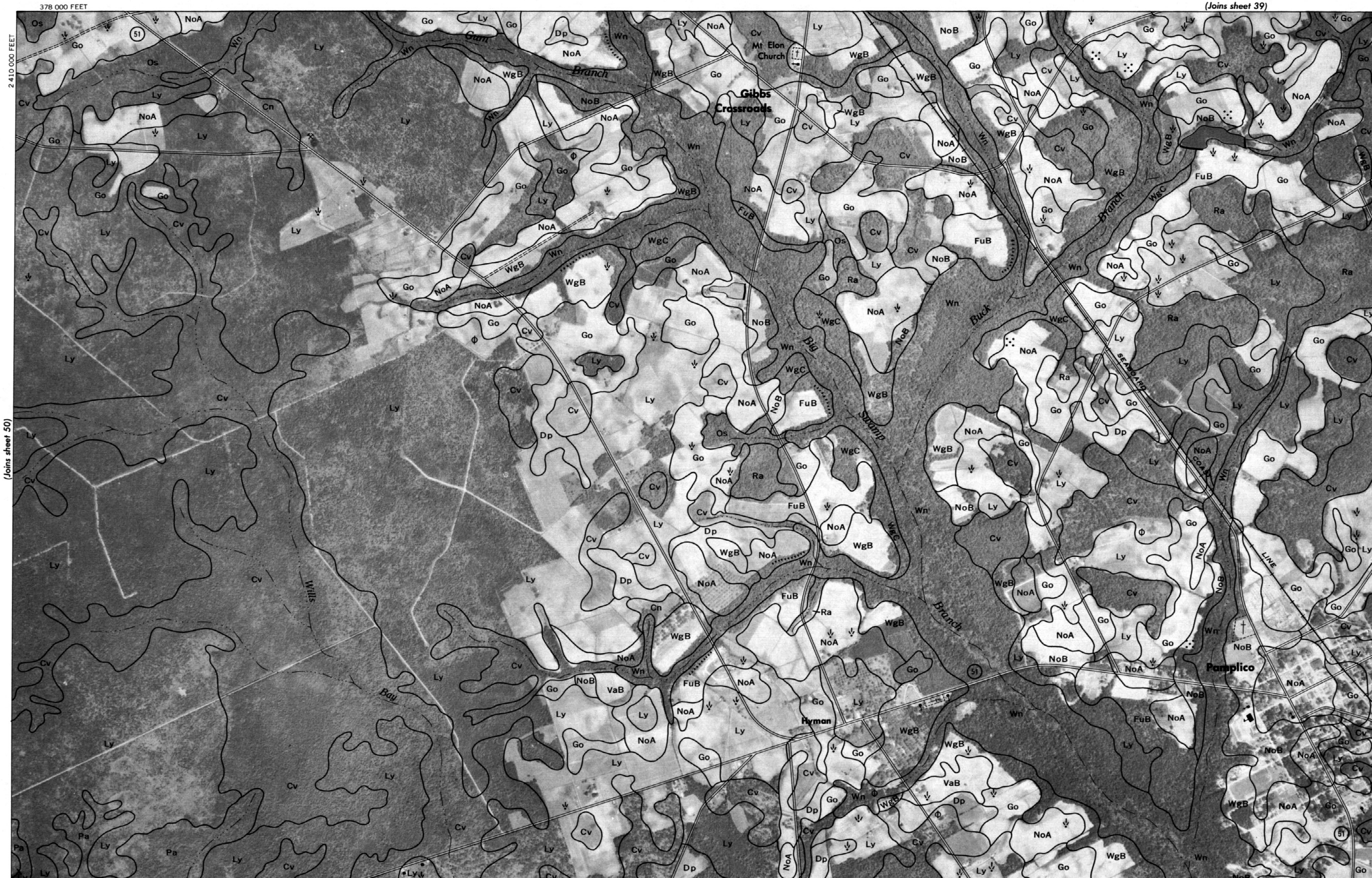
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

378 000 FEET

(Joins sheet 39)

2 410 000 FEET

(Joins sheet 50)



(Joins sheet 52)

N

1 Mile

5 000 Feet

Scale 1:20 000

2 435 000 FEET

(Joins sheet 65)

362 000 FEET

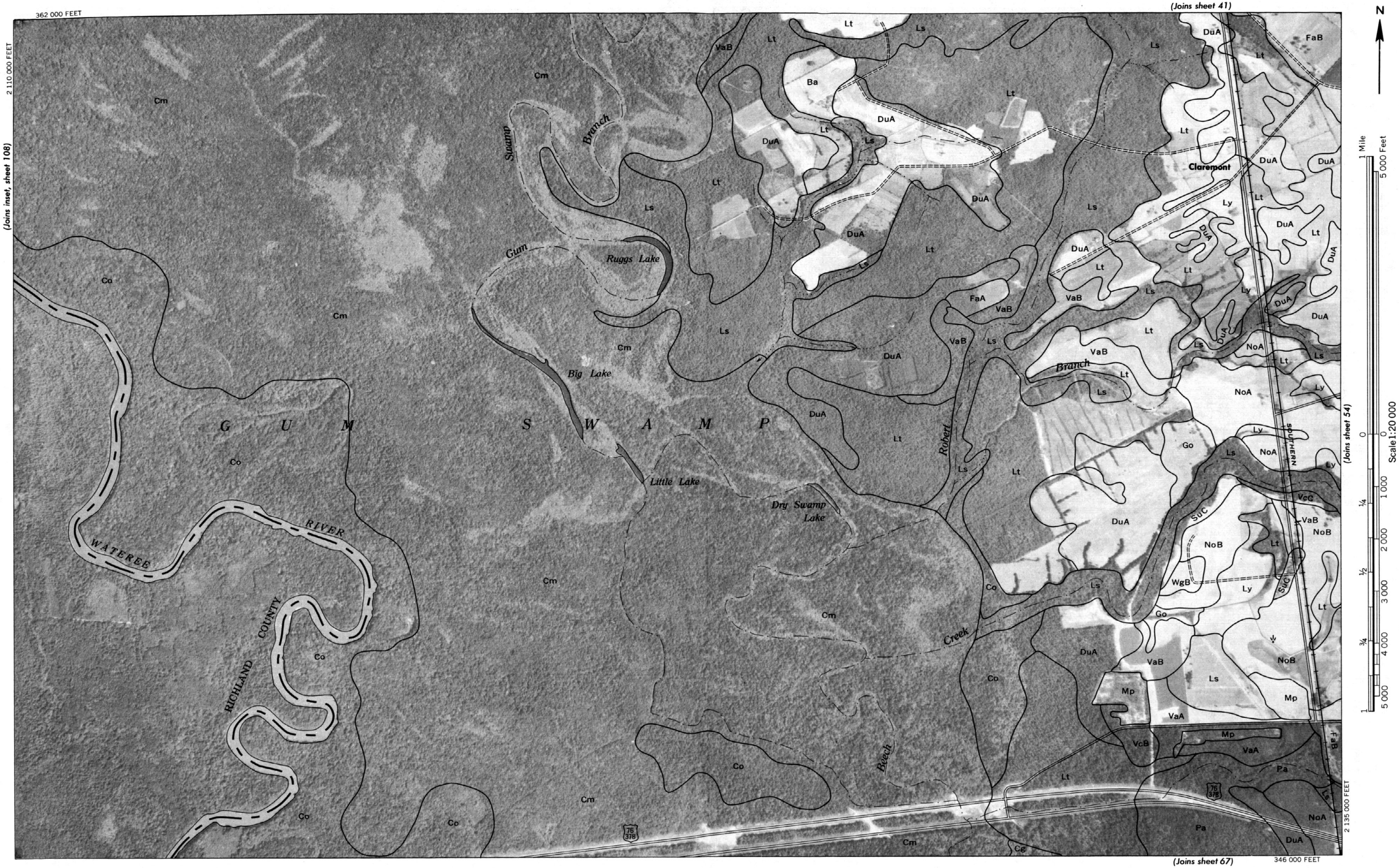
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 52

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 52

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 53

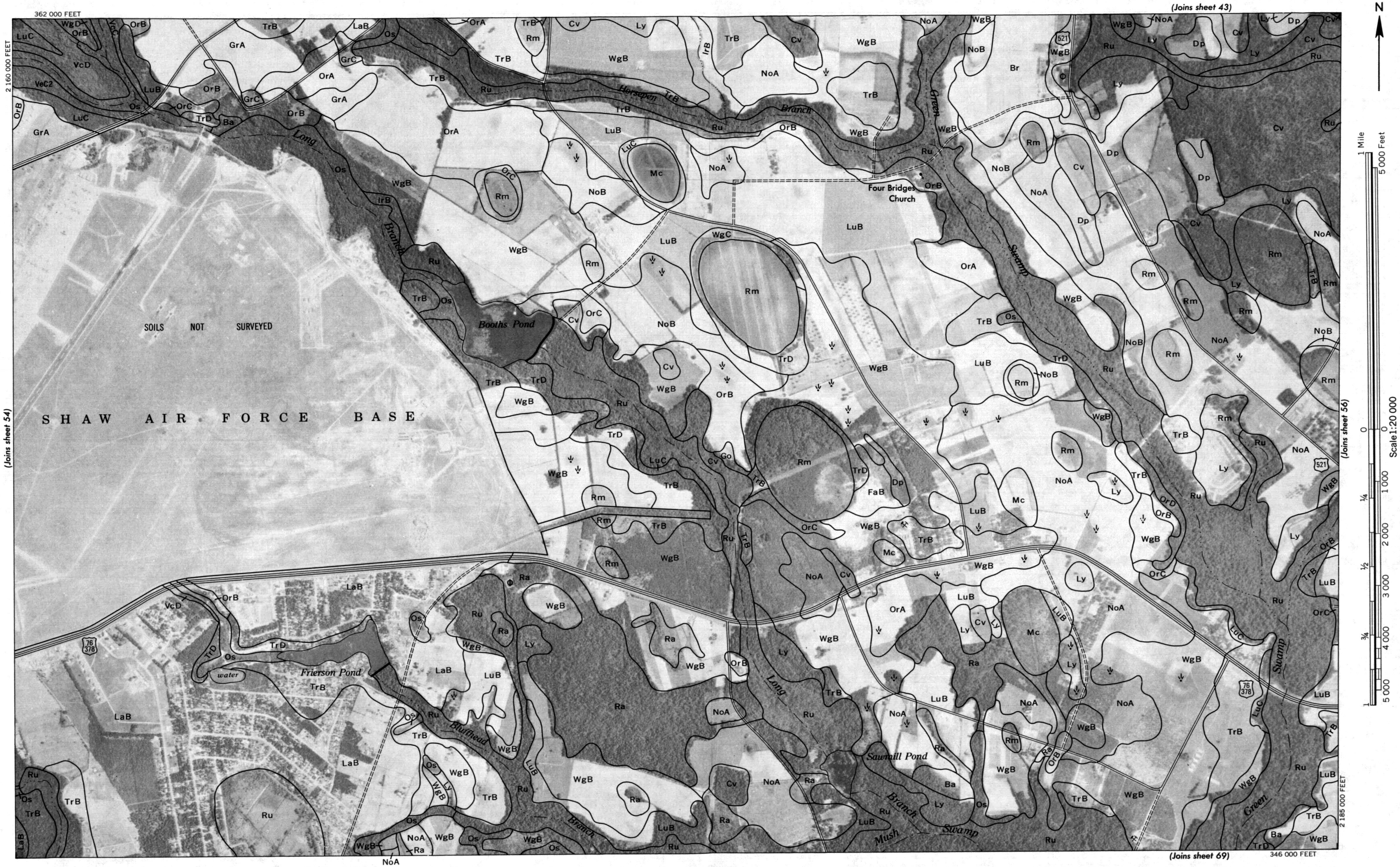
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 54

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 55

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

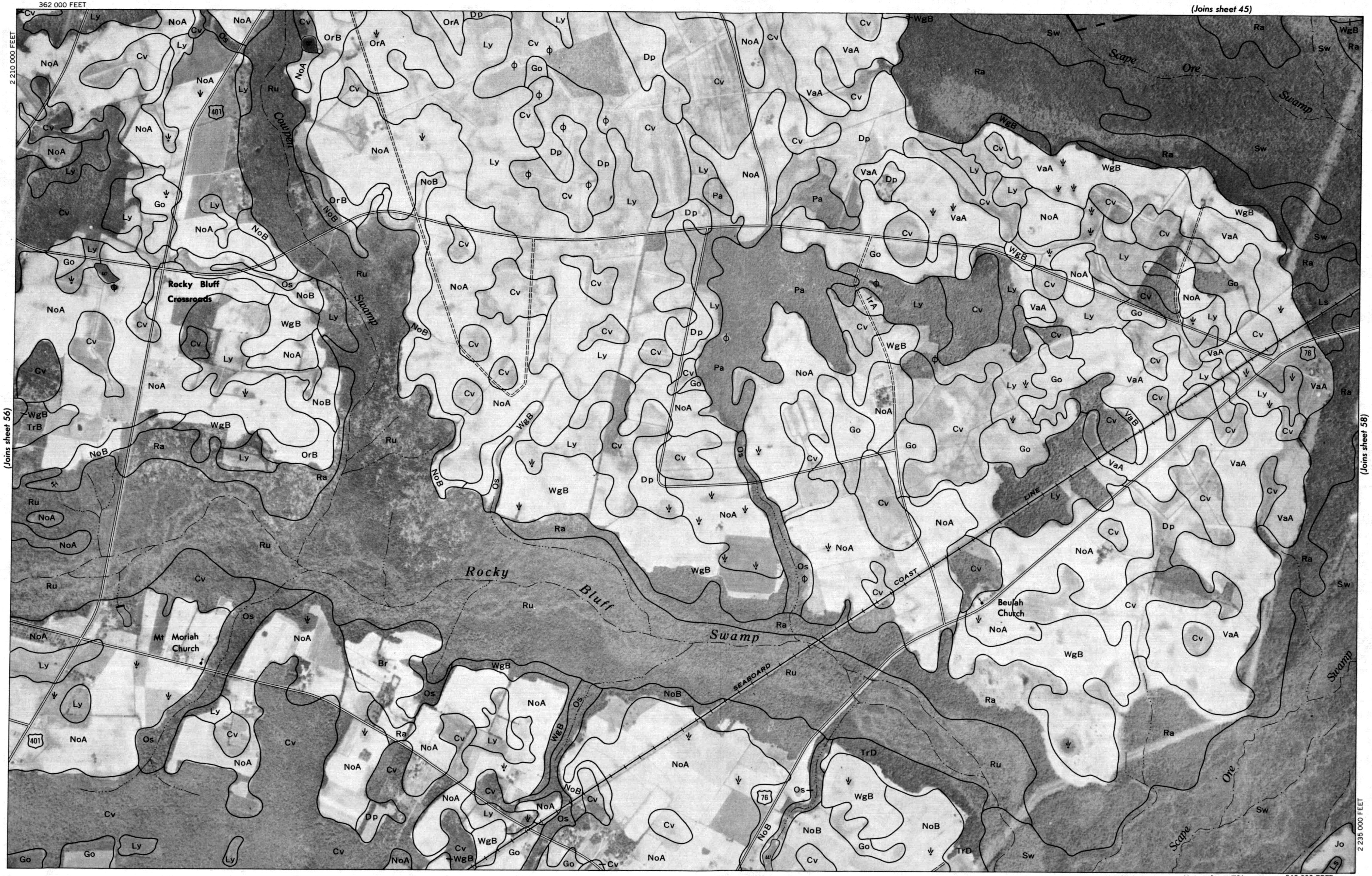
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 56

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 57

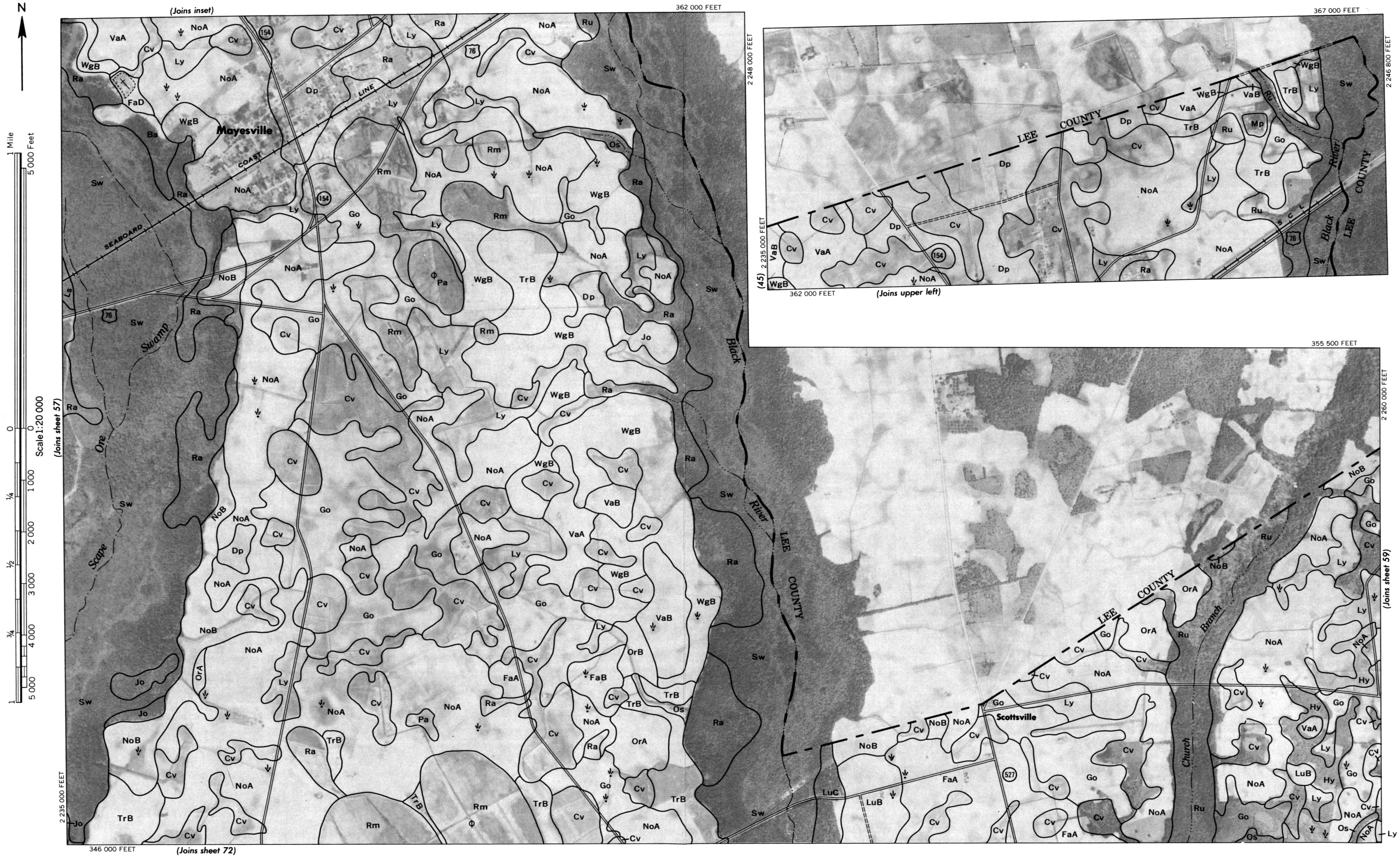
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



N

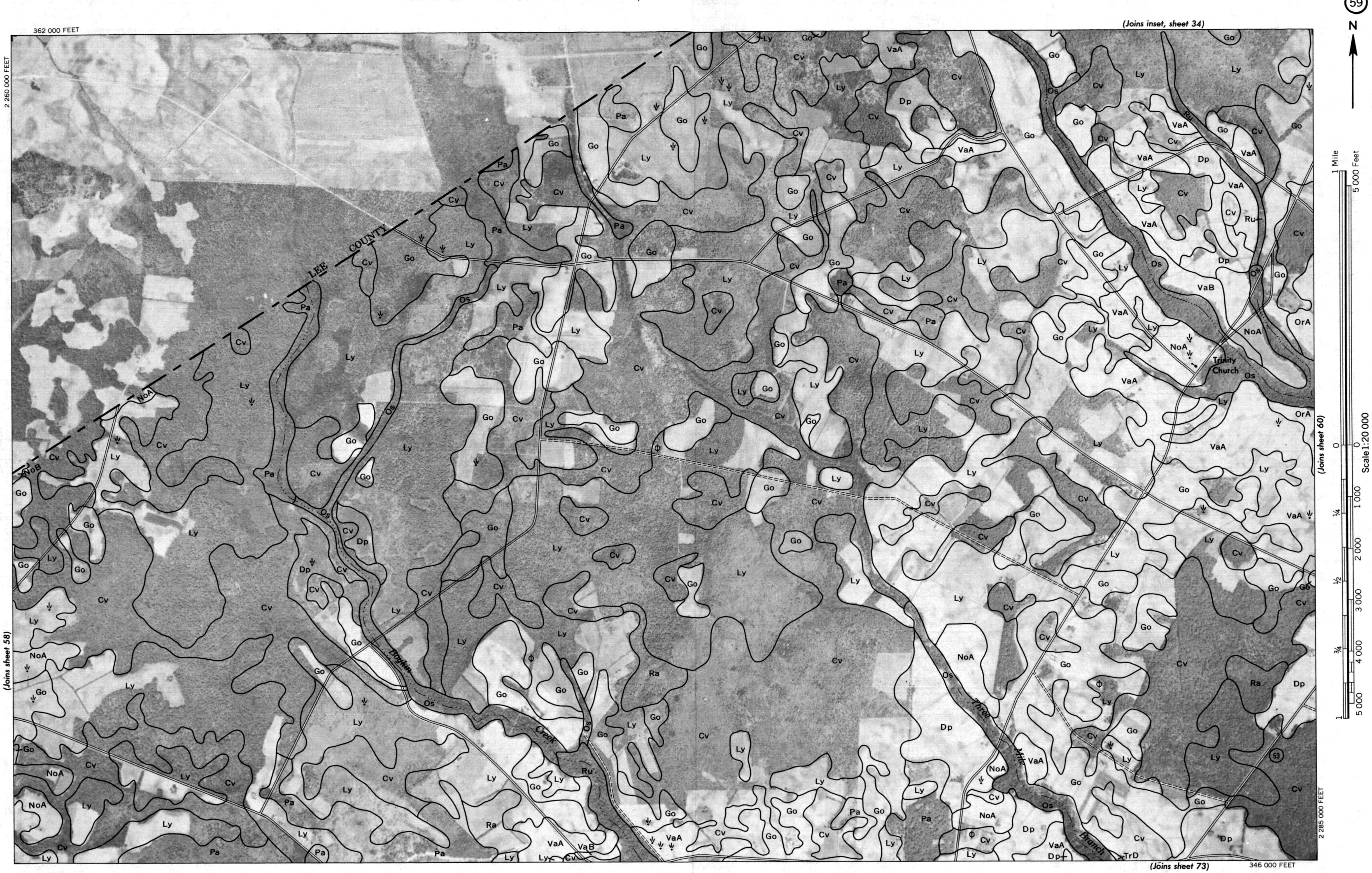
1 Mile
5 000 Feet
Scale 1:20 000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

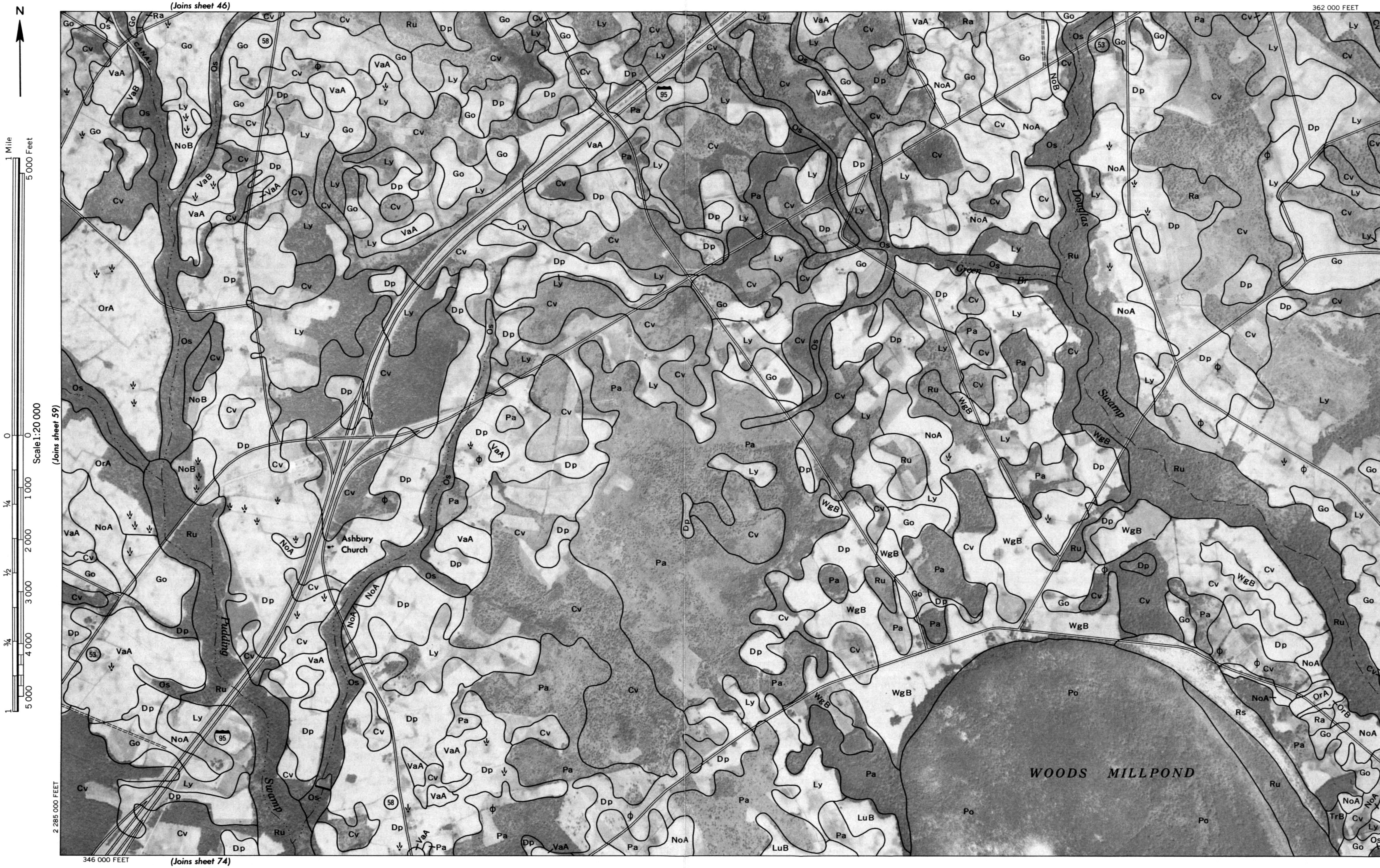


FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 59

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 60



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 60

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

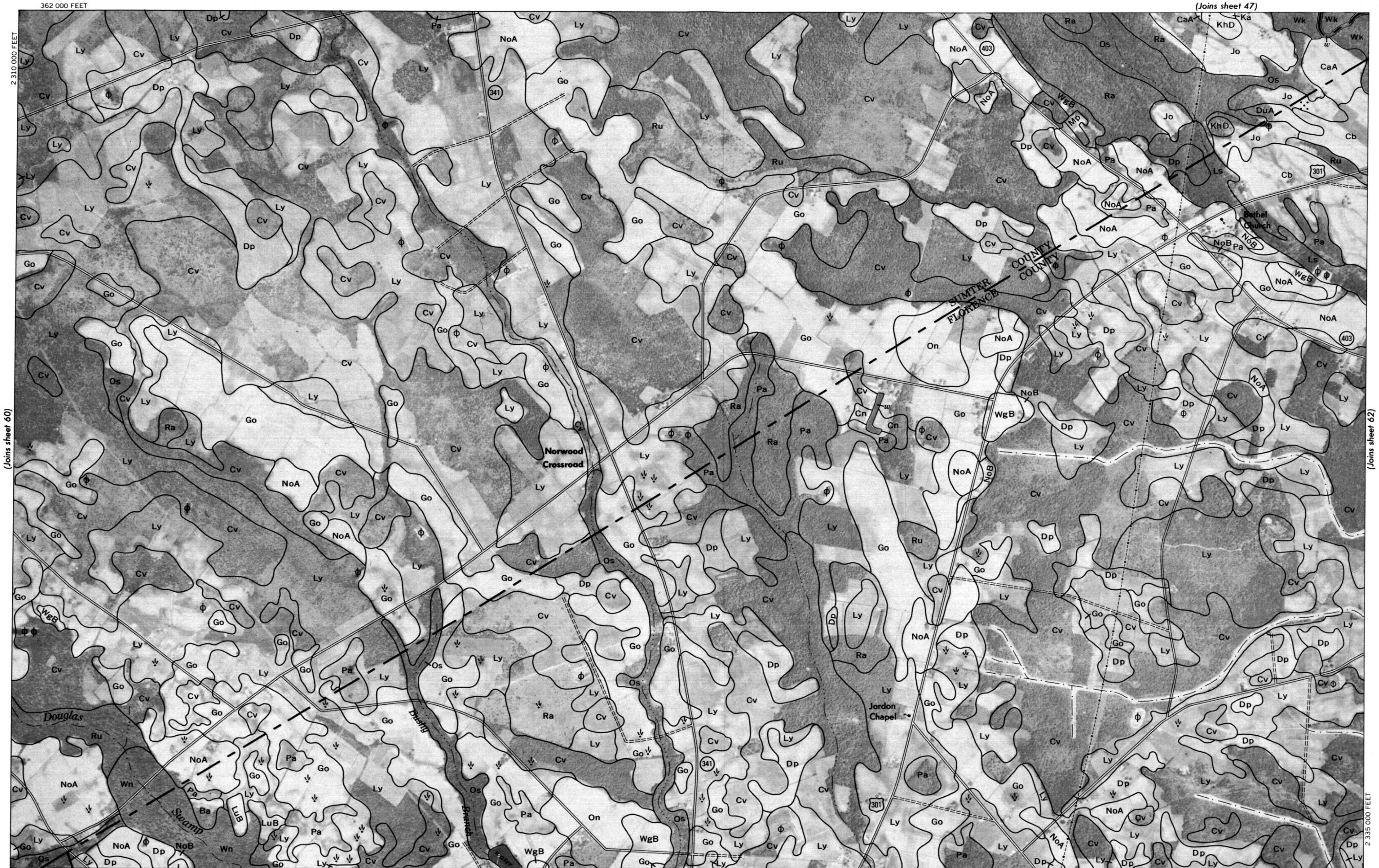
N

362 000 FEET

(Joins sheet 47)

2 310 000 FEET

(Joins sheet 60)



(Joins sheet 62)

1 Mile

5 000 Feet

0

1/4

1/2

3/4

1

0

1000

2000

3000

4000

5000

Scale 1:20 000

2 335 000 FEET

(Joins sheet 75)

346 000 FEET

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 61

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

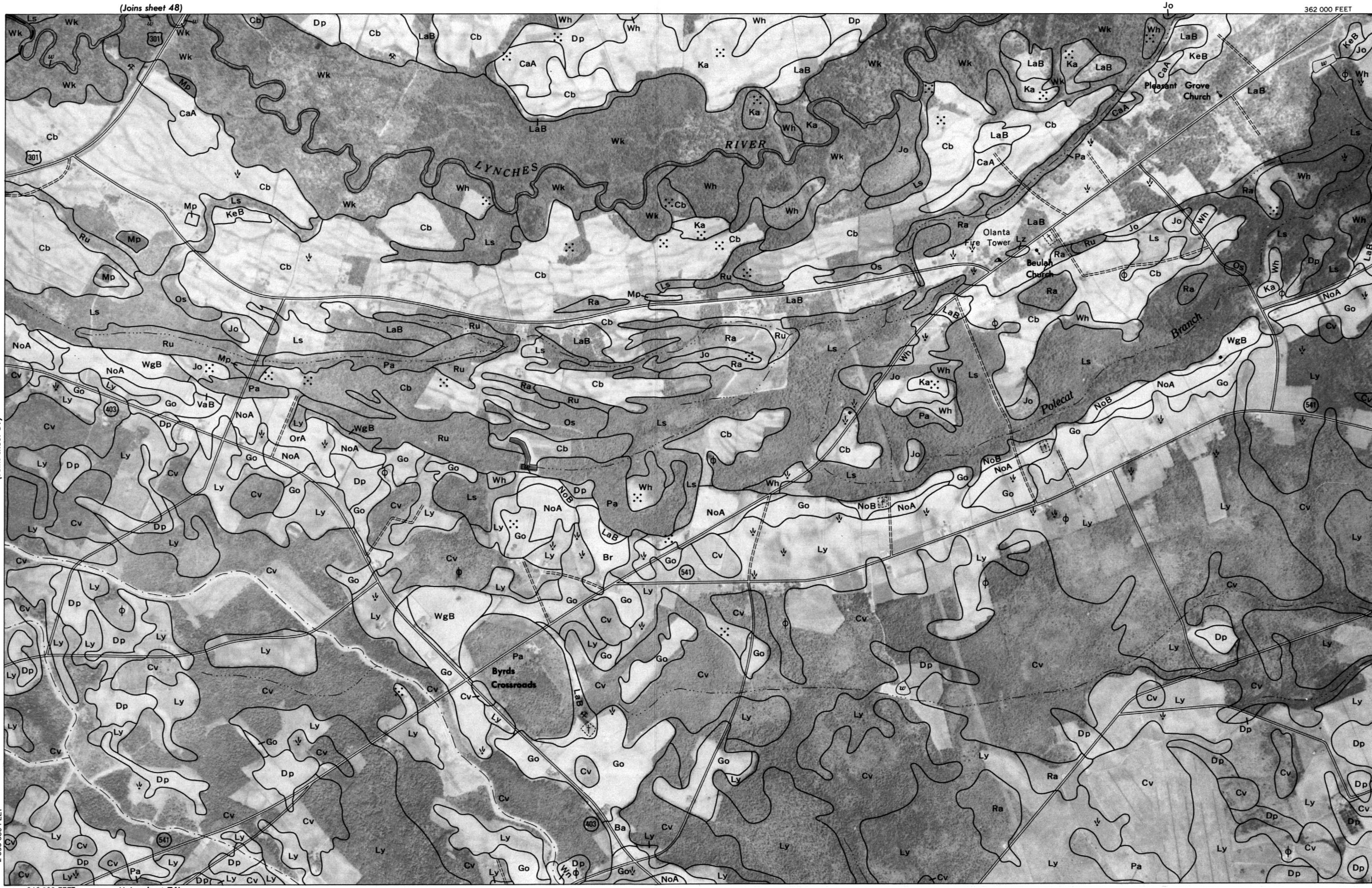
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 62

N

Scale 1:20 000

1 Mile — 0 — ¼ — ½ — ¾ — 1

5 000 Feet — 0 — 1 000 — 2 000 — 3 000 — 4 000 — 5 000



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 62

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

(Joins sheet 49)

362 000 FEET

2 360 000 FEET

(Joins sheet 77)

346 000 FEET

2 385 000 FEET

1 Mile

5 000 Feet

0 ¼ ½ ¾ 1

0 1000 2000 3000 4000 5000

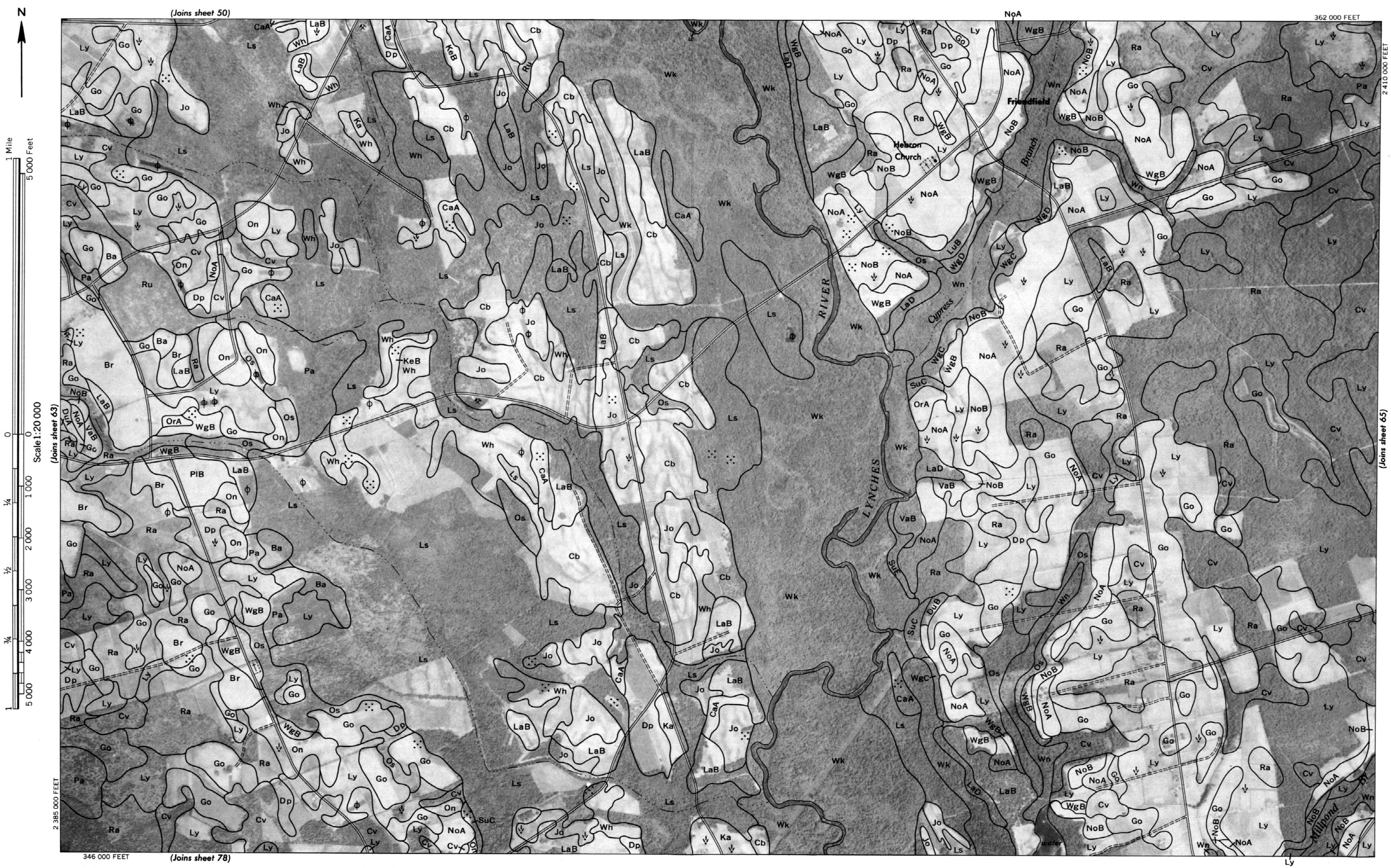
Scale 1:20 000

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 63

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 64



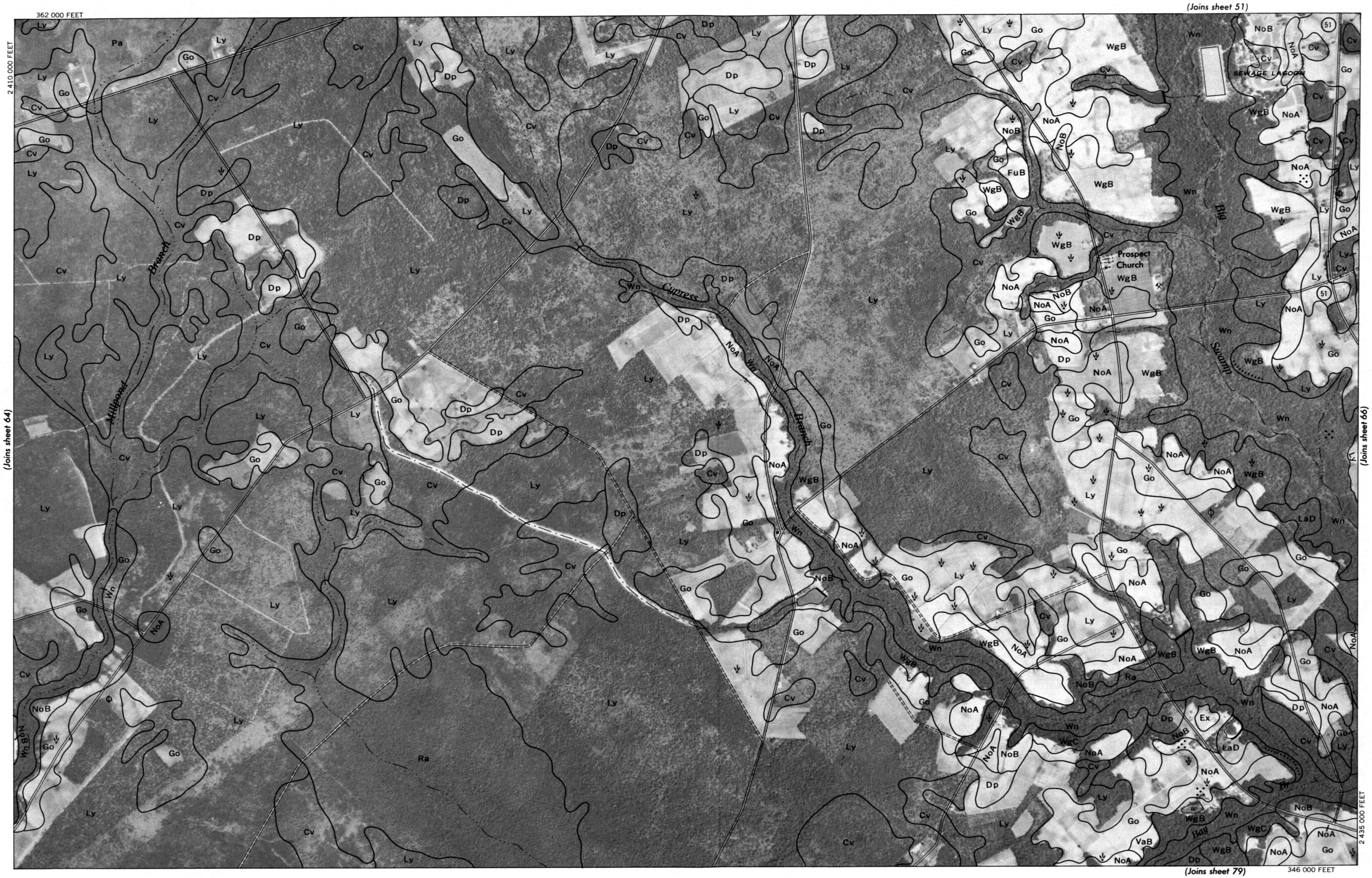
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 64

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

65

N



1 Mile
5 000 Feet
0
¼
½
¾
1
0
1000
2000
3000
4000
5 000
Scale 1:20 000

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 65

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 66

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 67

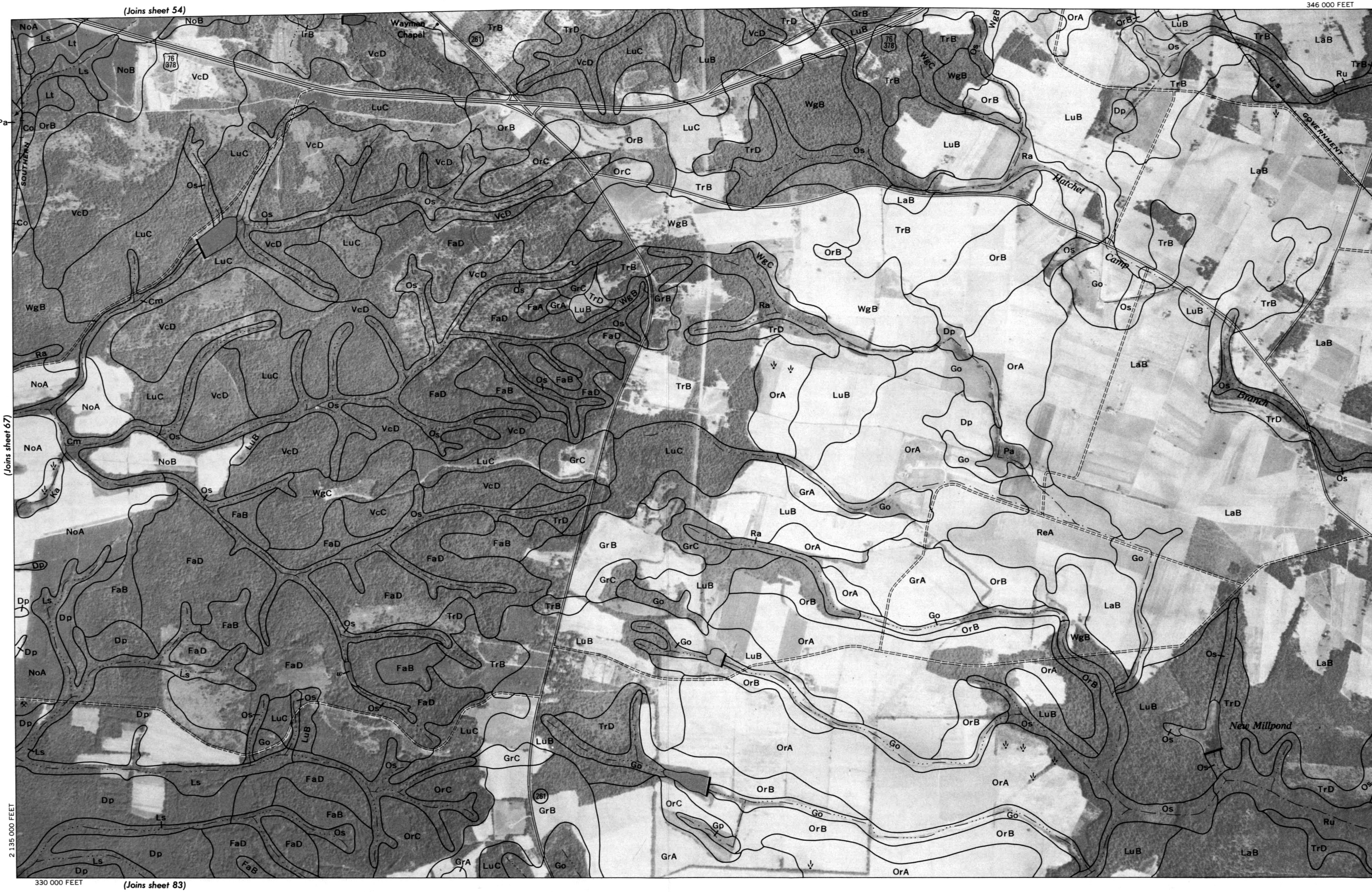
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 68

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

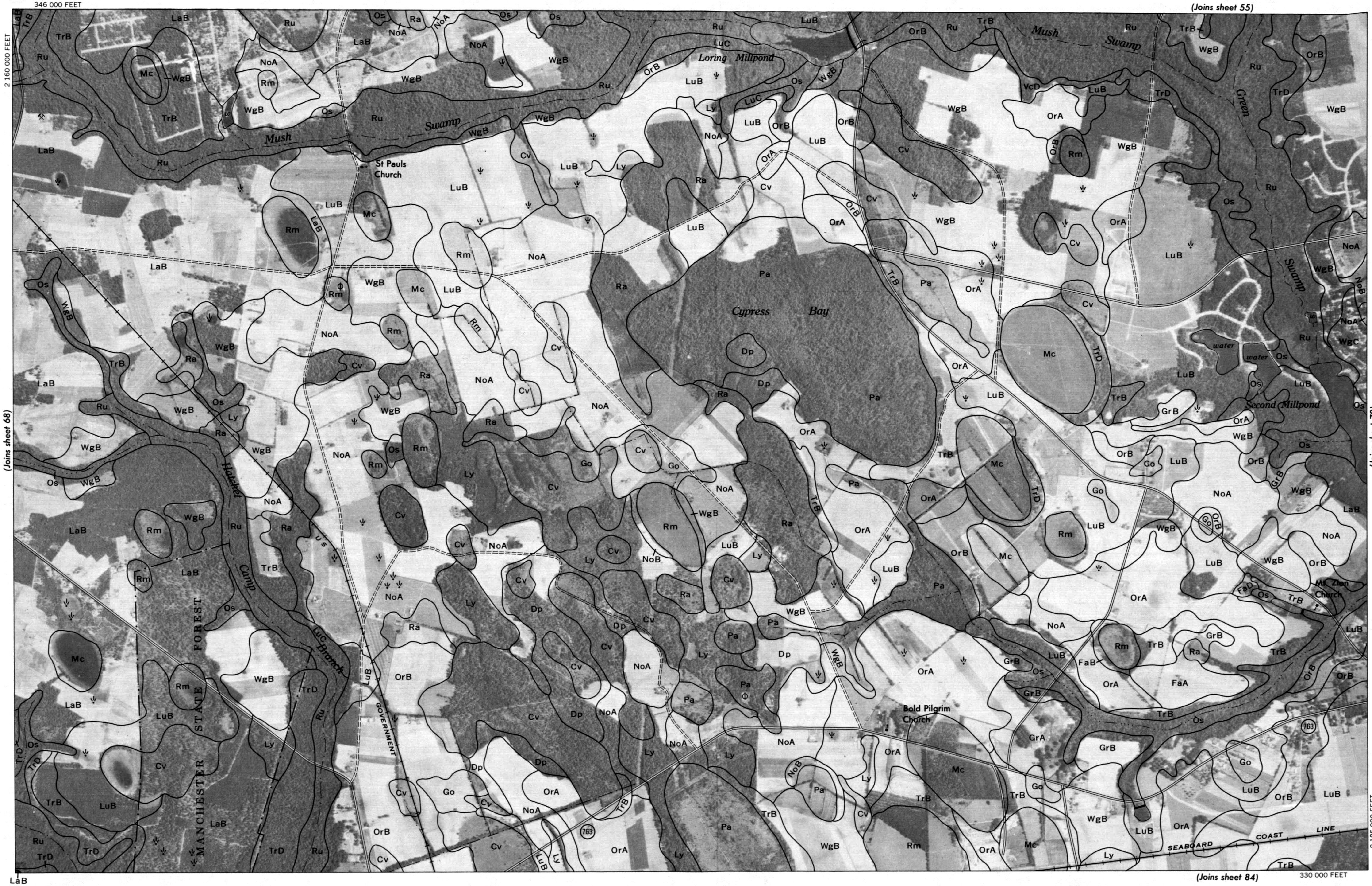
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 68

69

N

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 69

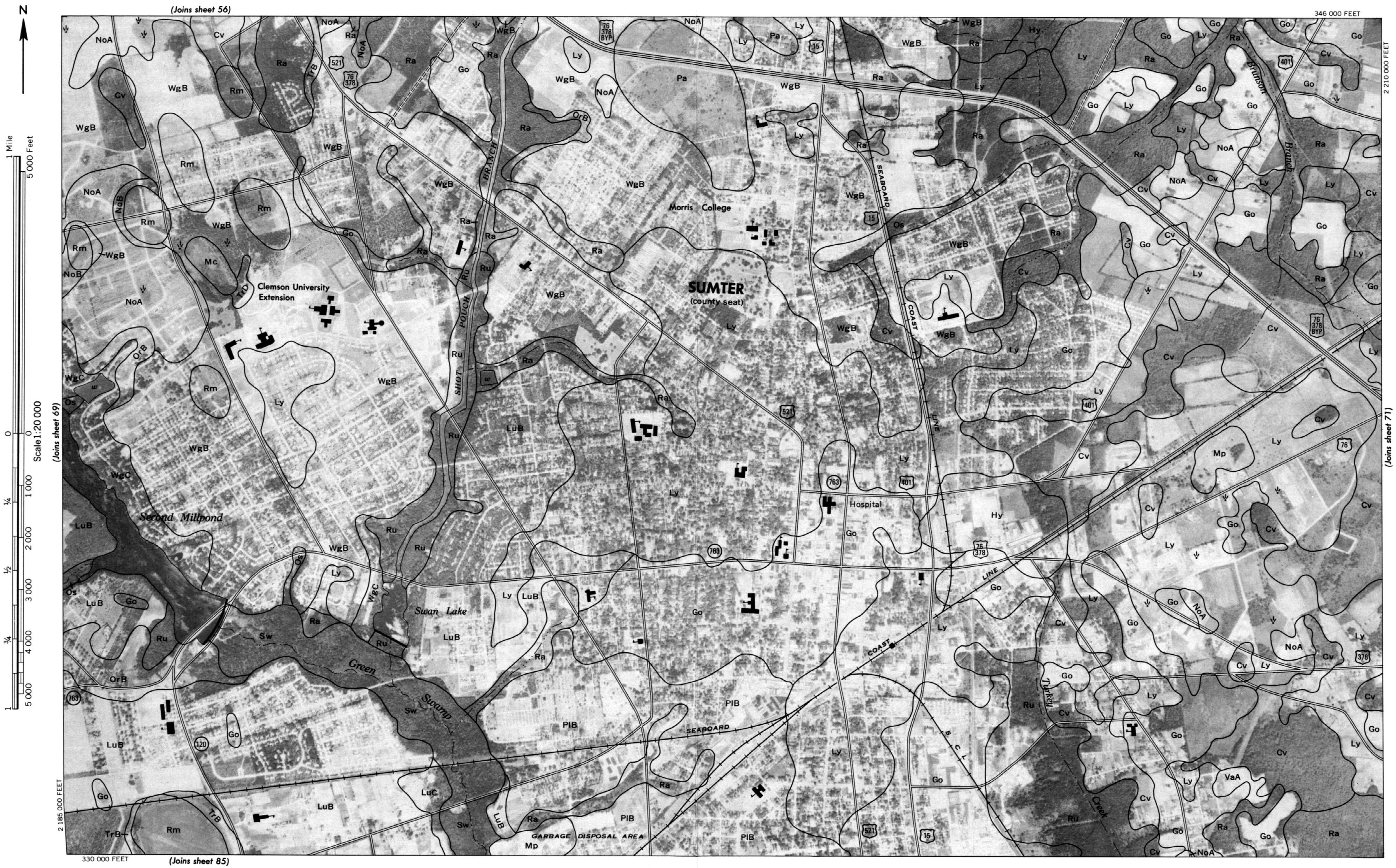
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



1 Mile
5000 Feet
0
Scale 1:20 000
1/4 1/2 3/4 1
0 1000 2000 3000 4000 5000

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 70



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 70

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

N

346 000 FEET

(Joins sheet 57)

2 210 000 FEET

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 71

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

(Joins sheet 70)

(Joins sheet 72)

1 Mile

5 000 Feet

Scale 1:20 000

0 | 1/4 | 1/2 | 3/4 | 1

0 | 1000 | 2000 | 3000 | 4000 | 5 000

2 235 000 FEET

(Joins sheet 86)

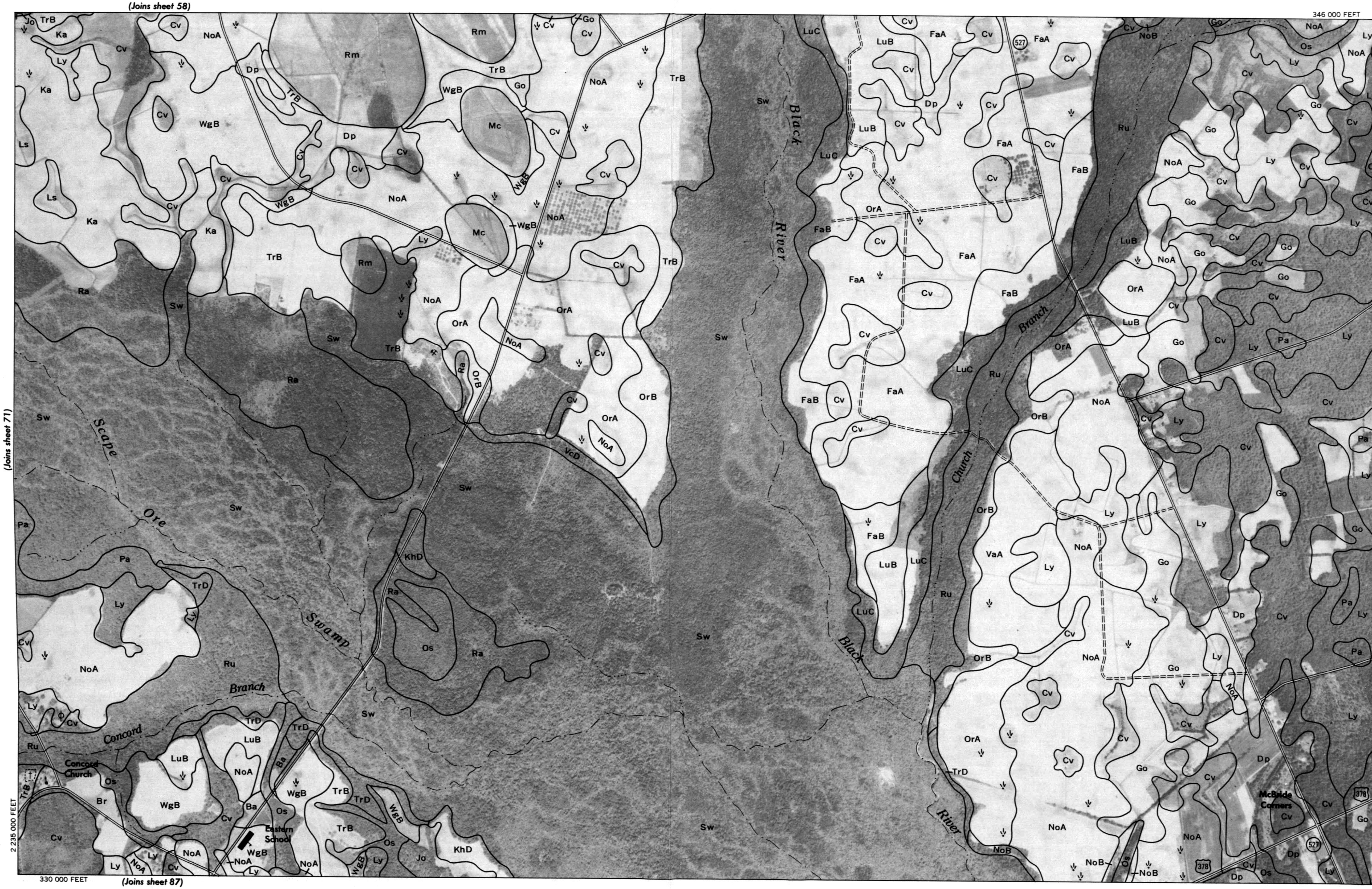
330 000 FEET

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 72

N

1 Mile
5 000 Feet
Scale 1:20 000



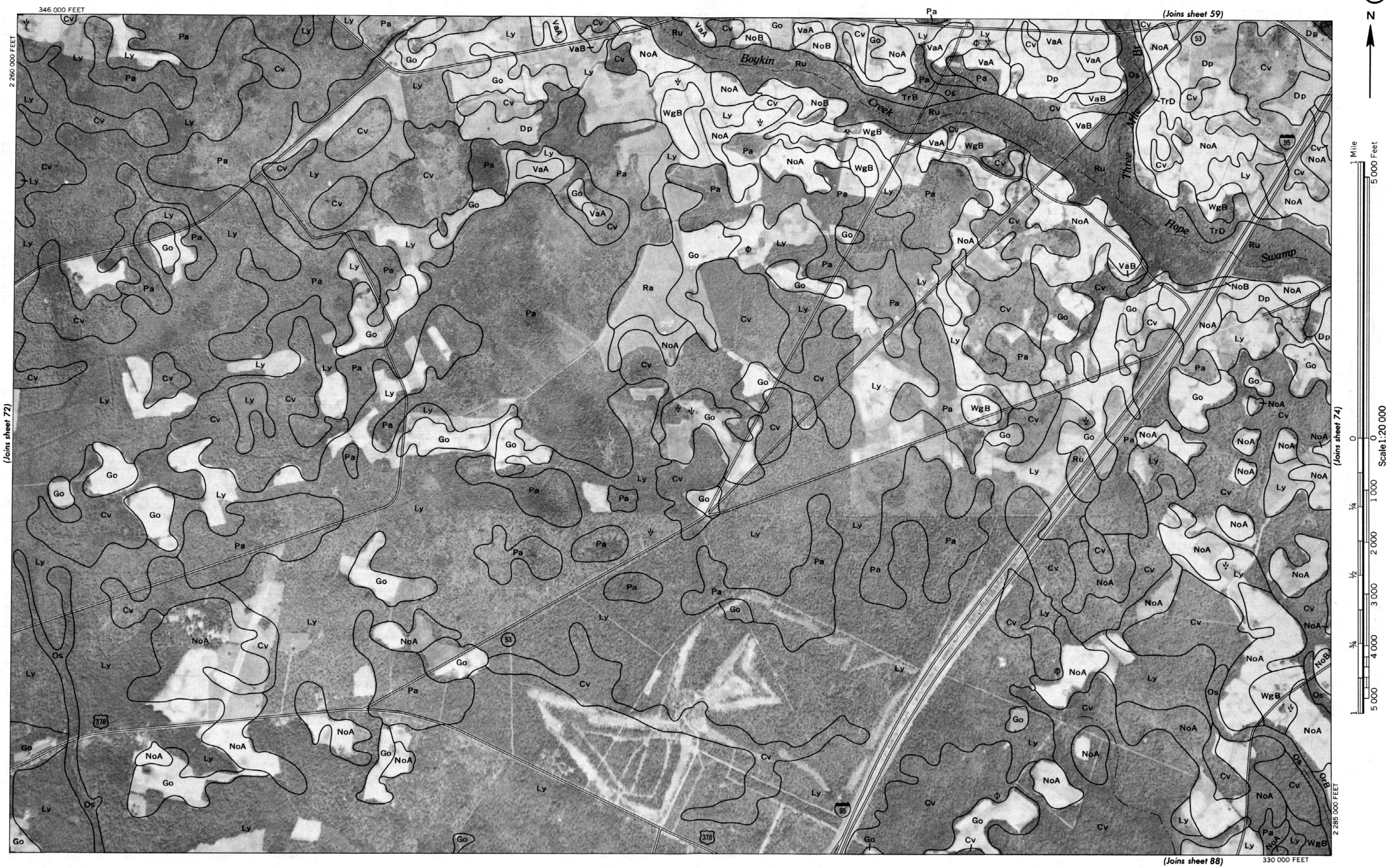
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 72

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

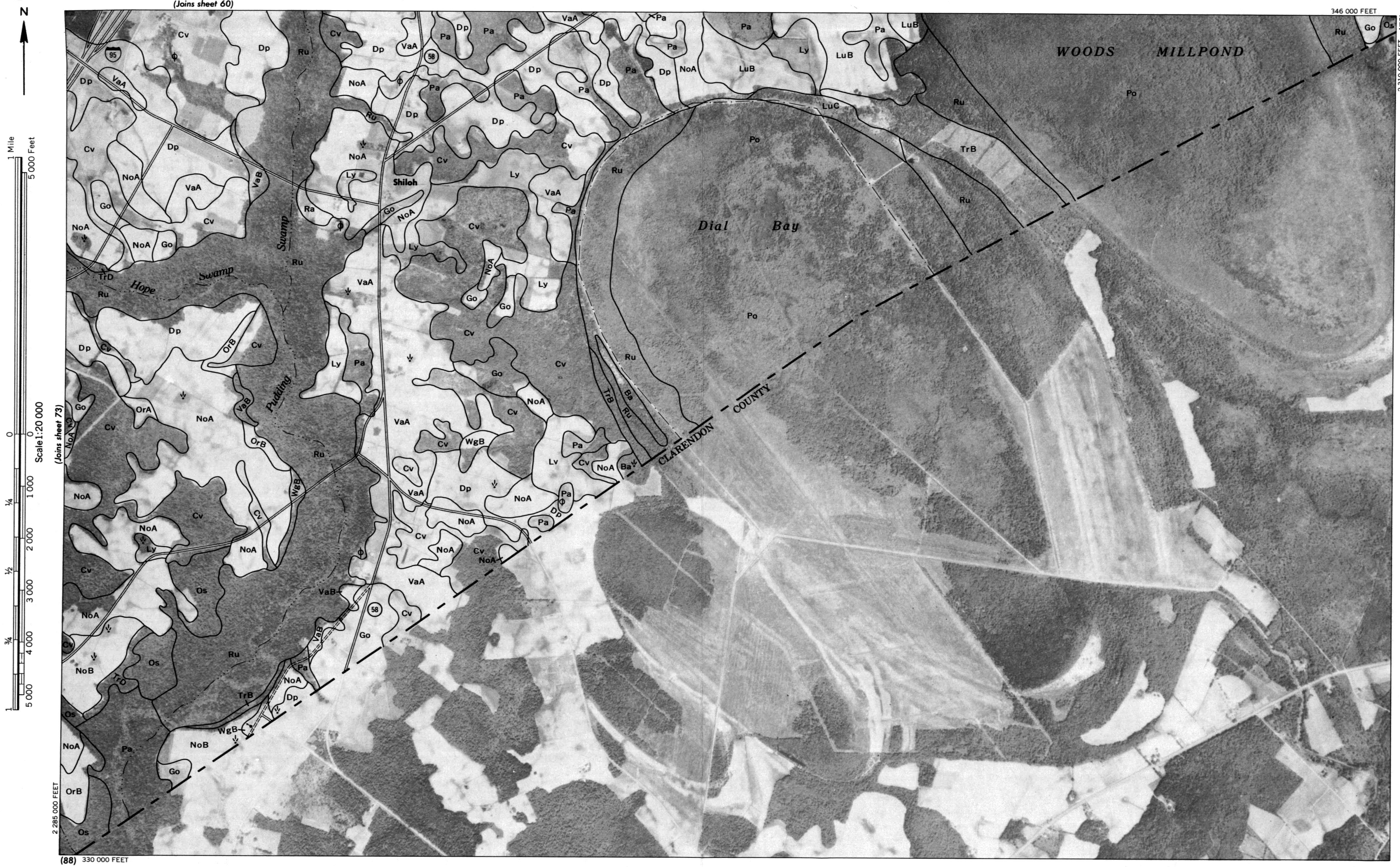
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 73

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

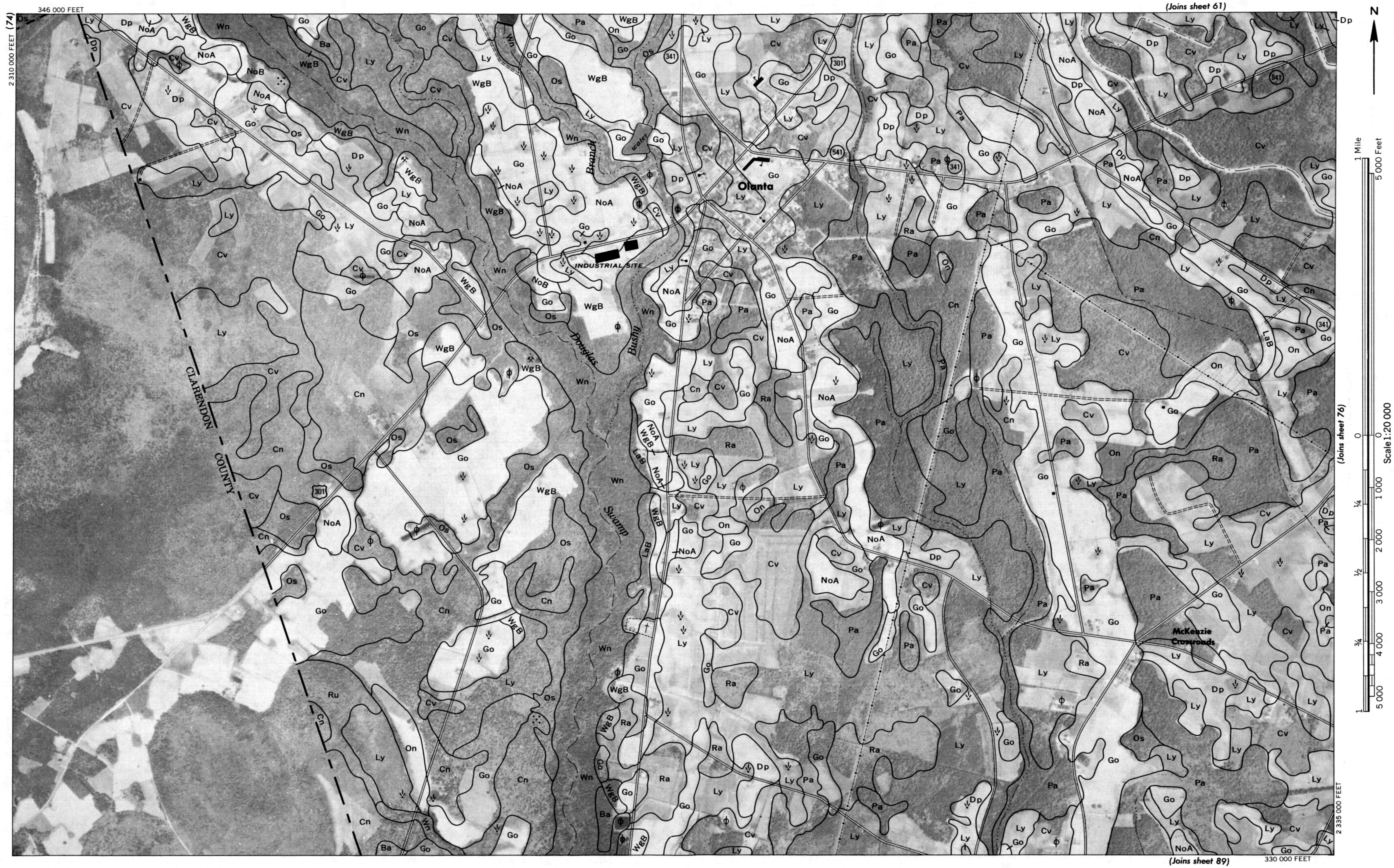
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 74



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 74

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 75

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

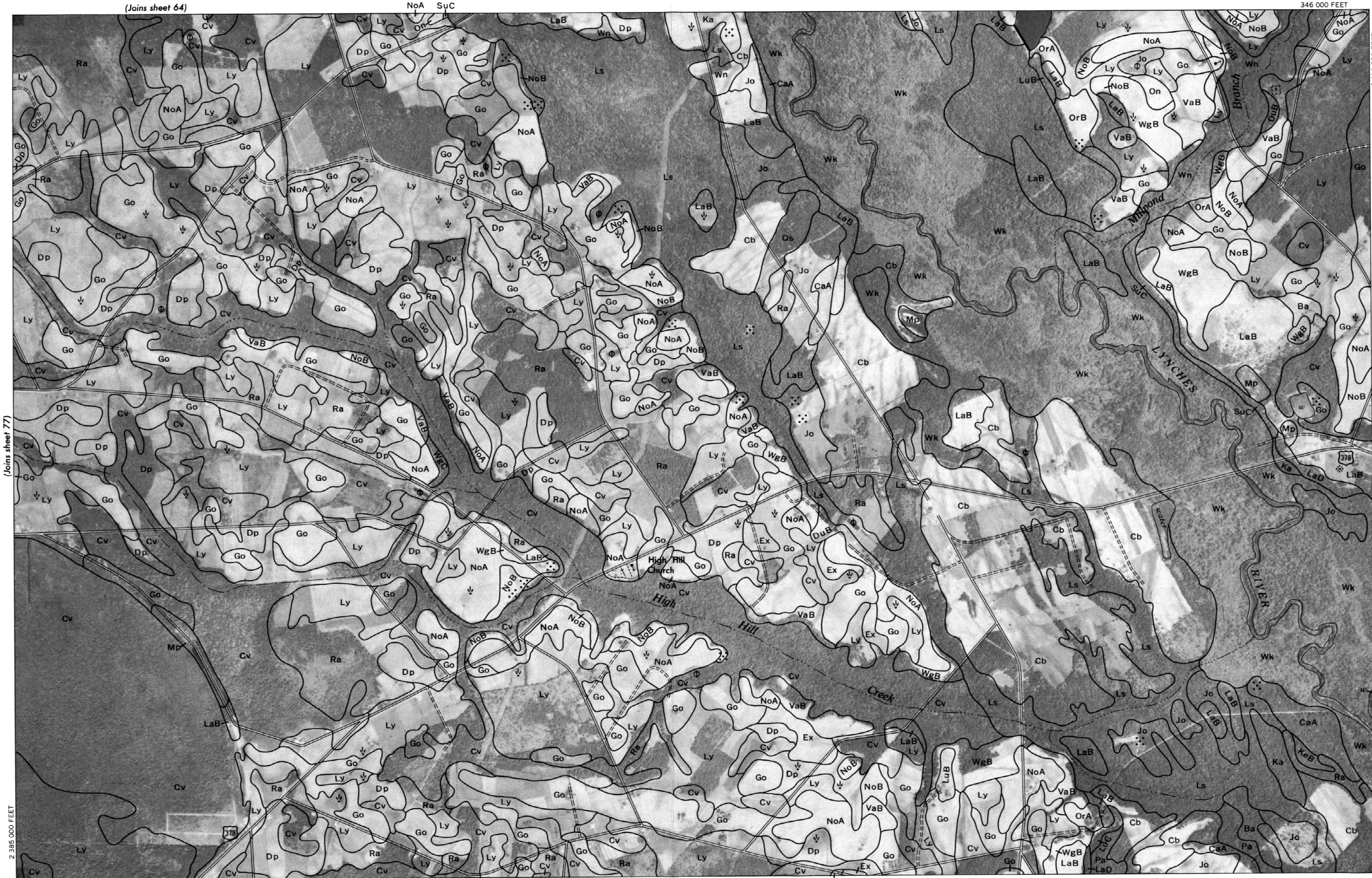
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 77
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

(78)

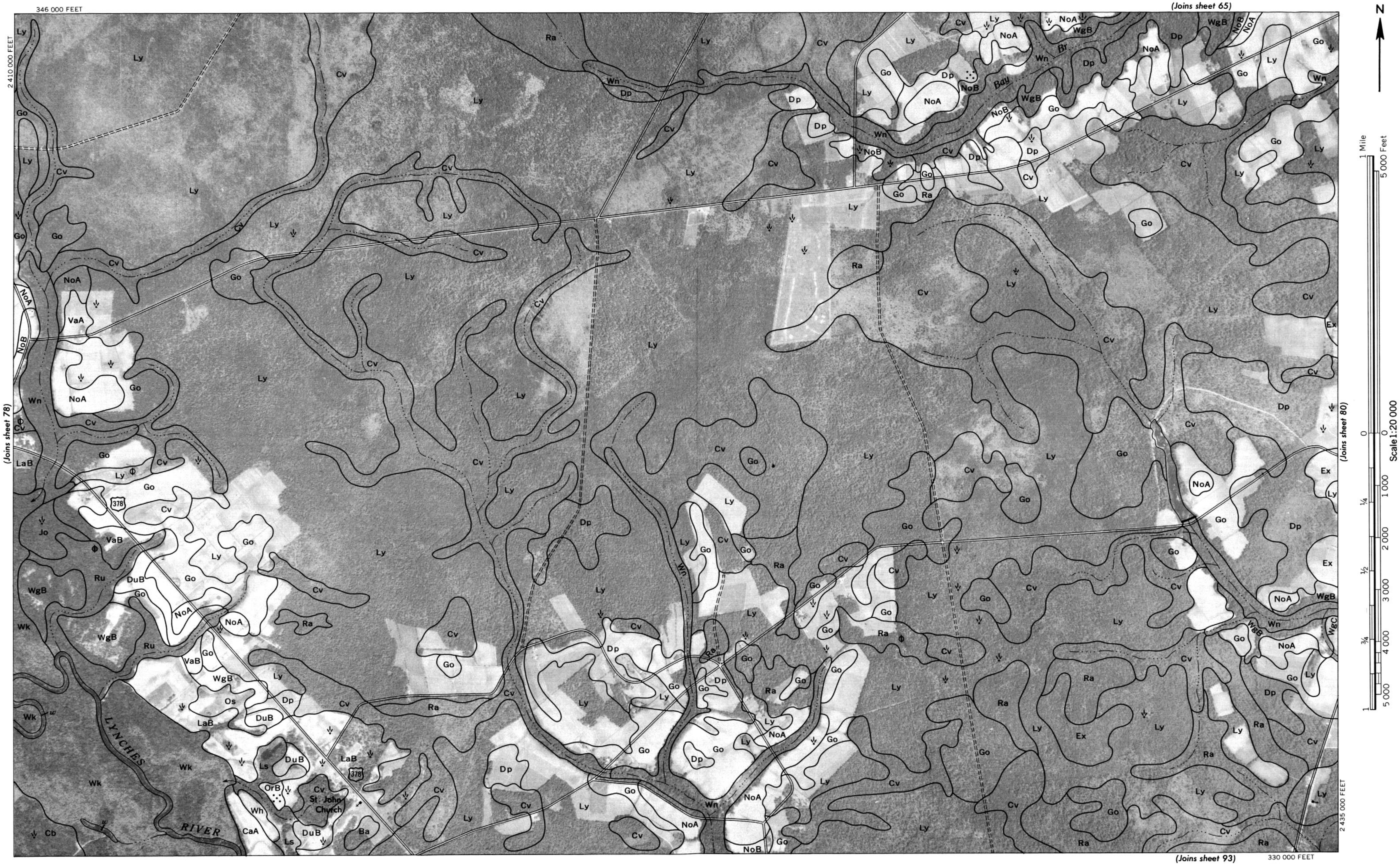
N

1 Mile — 5 000 Feet
Scale 1:20 000
0 — ¼ — ½ — ¾ — 1
0 — 1000 — 2000 — 3000 — 4000 — 5000



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



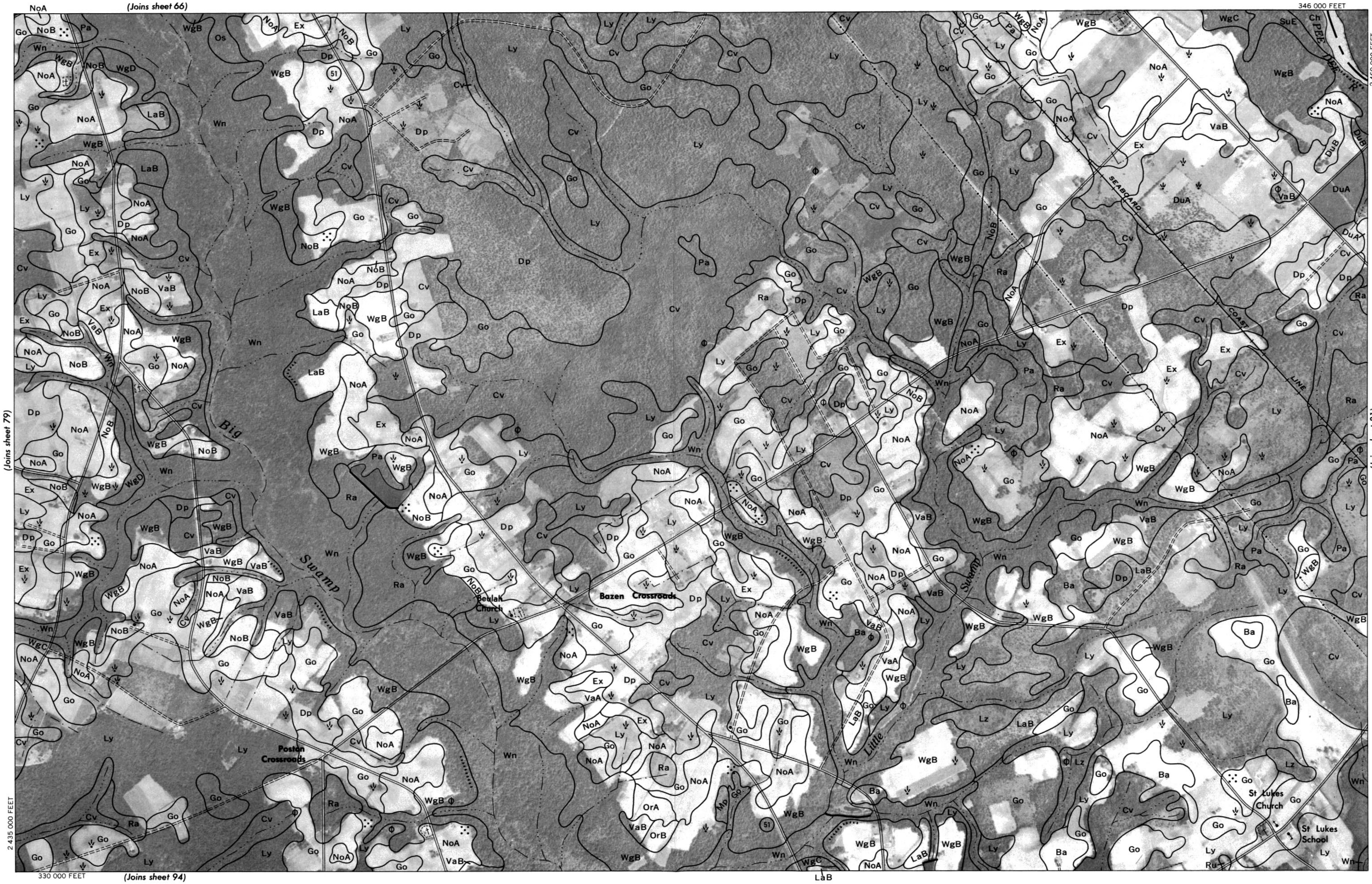
Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 79

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

N

1 Mile
5 000 Feet
Scale 1:20 000
0 1/4 1/2 3/4 1
0 1 000 2 000 3 000 4 000 5 000



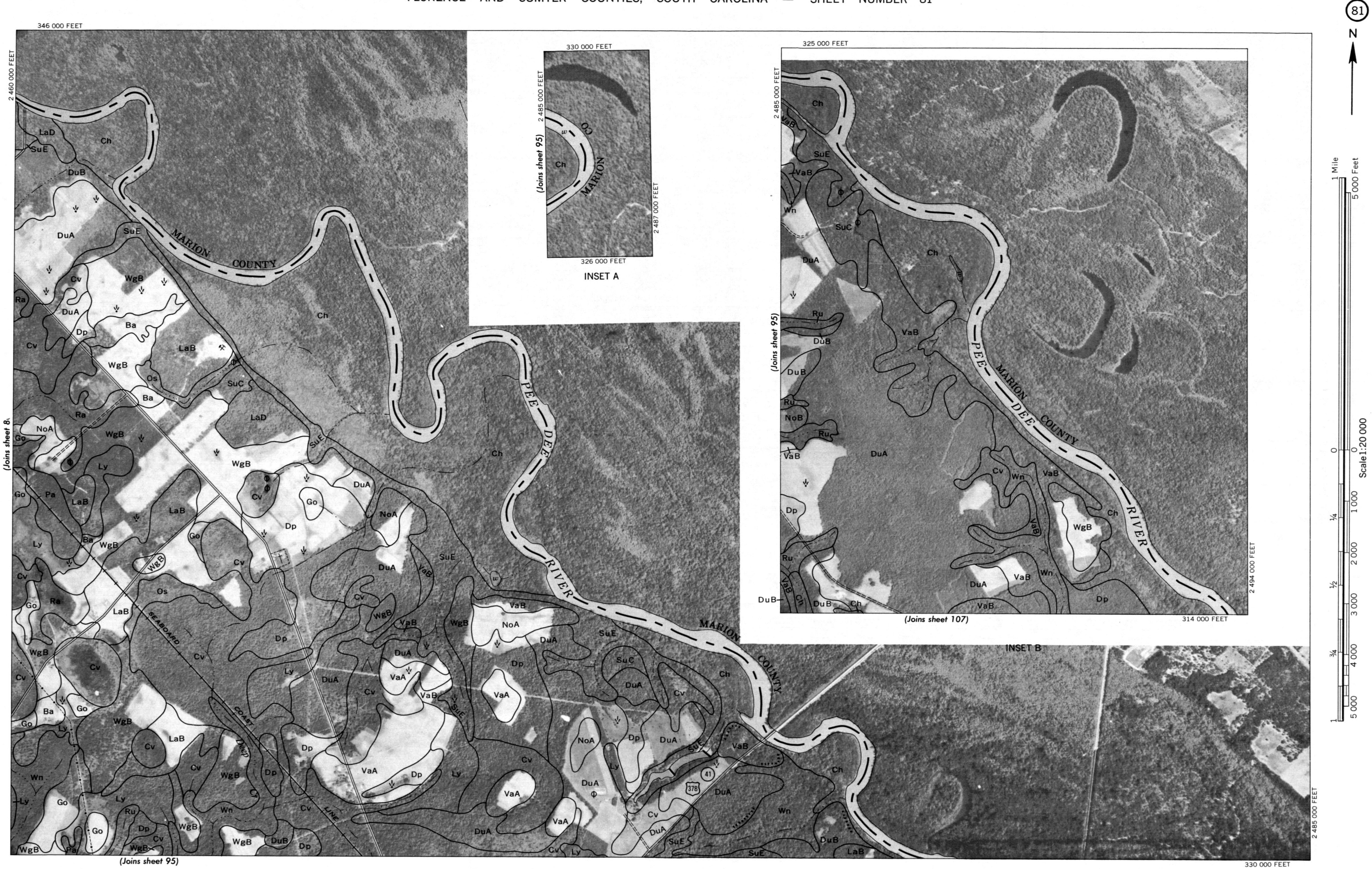
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 80

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 81

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

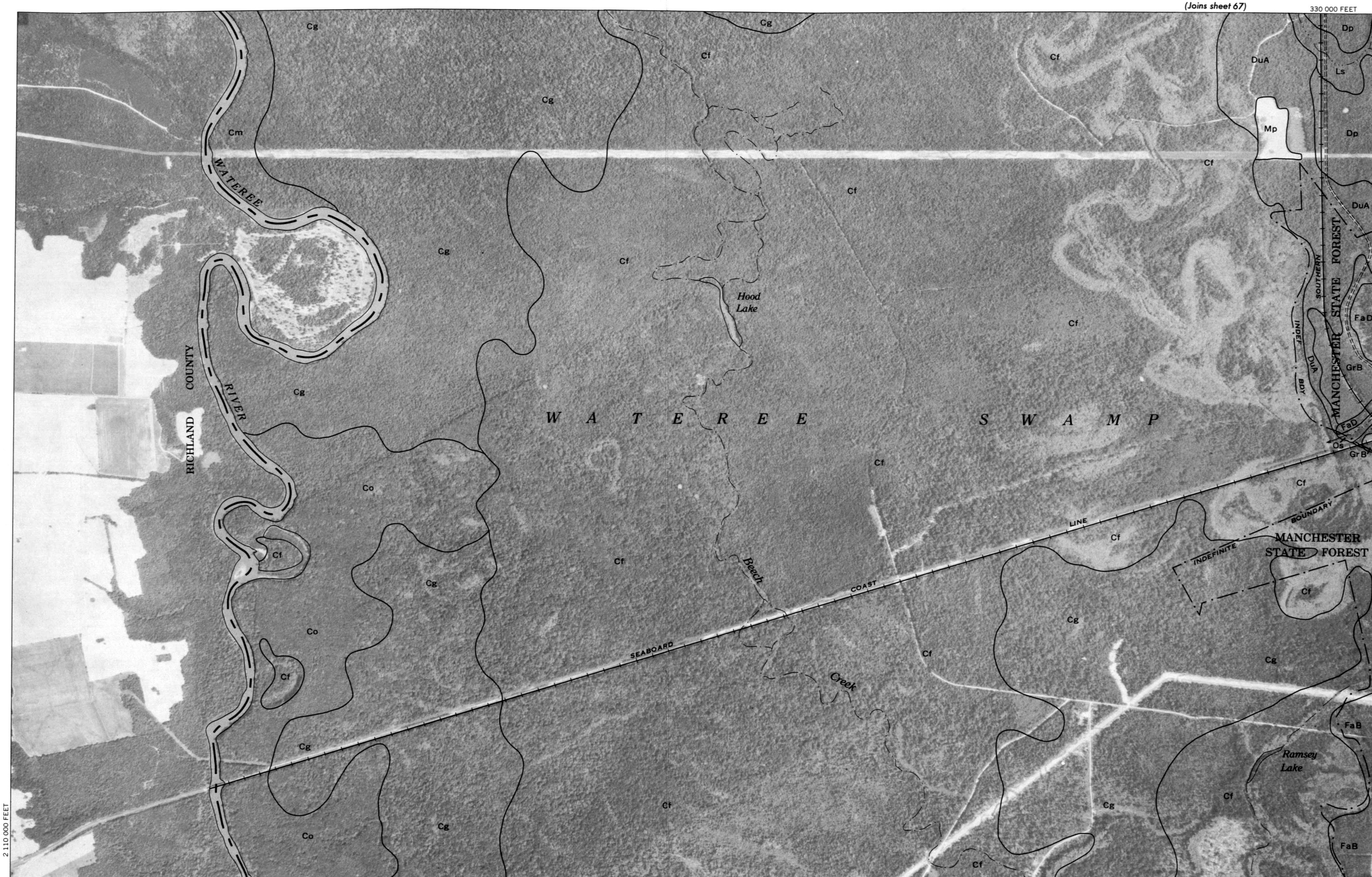


Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 82

N

Scale 1:20 000



1 Mile 0 1/4 1/2 3/4 1

5 000 Feet 0 1 000 2 000 3 000 4 000 5 000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 82

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 83

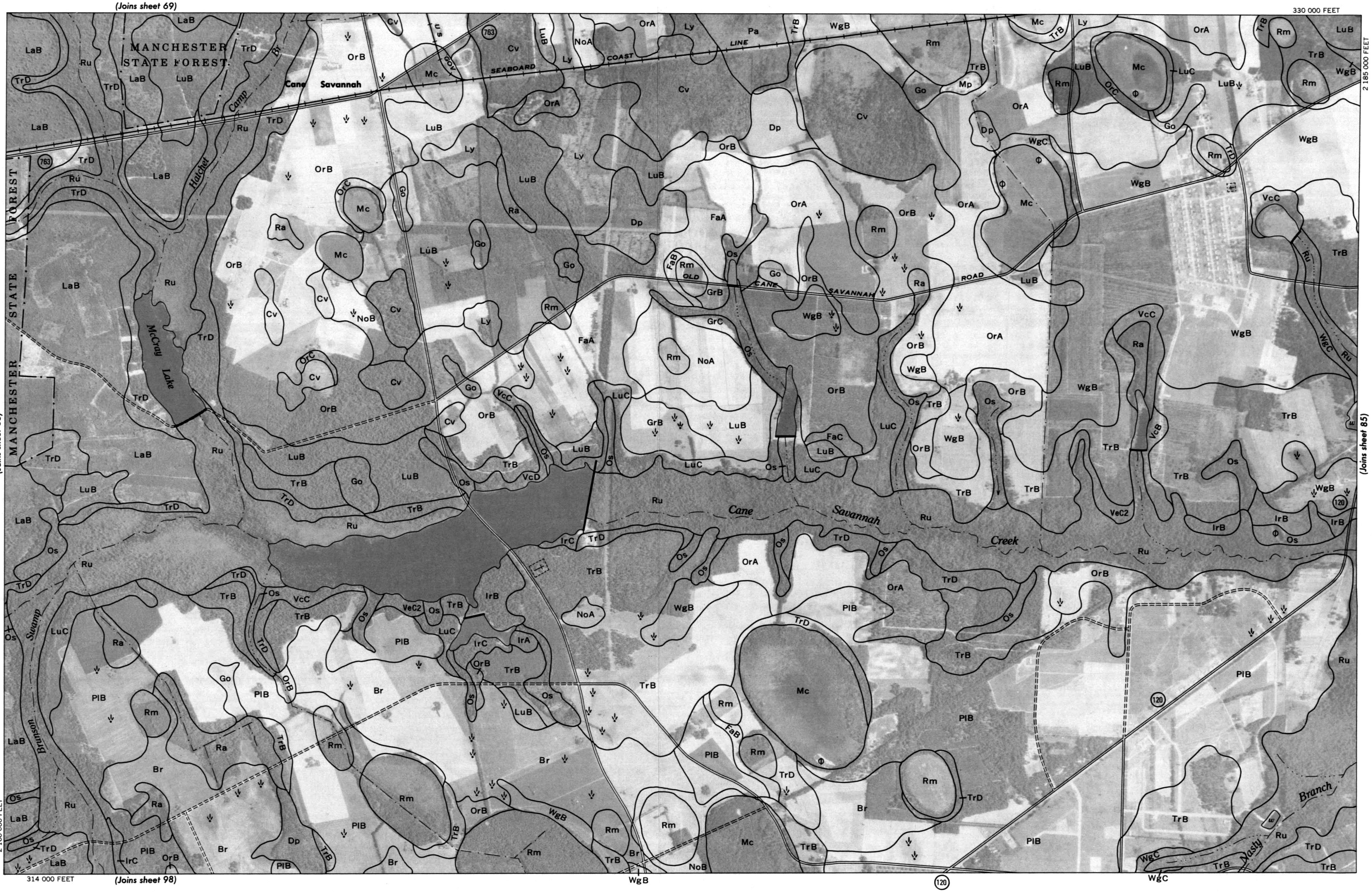
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 84

N

1 Mile
5 000 Feet
0
Scale 1:20 000
0 1 000 ¼ 2 000 ½ 3 000 ¾ 4 000 5 000 1



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

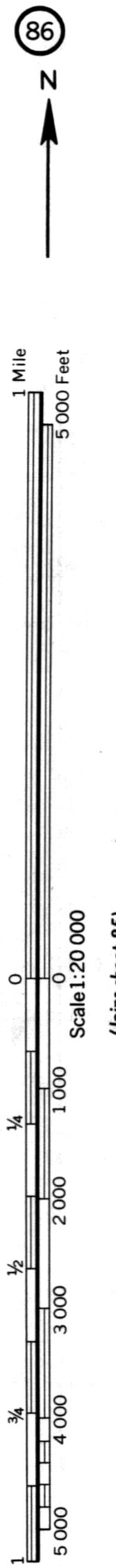
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

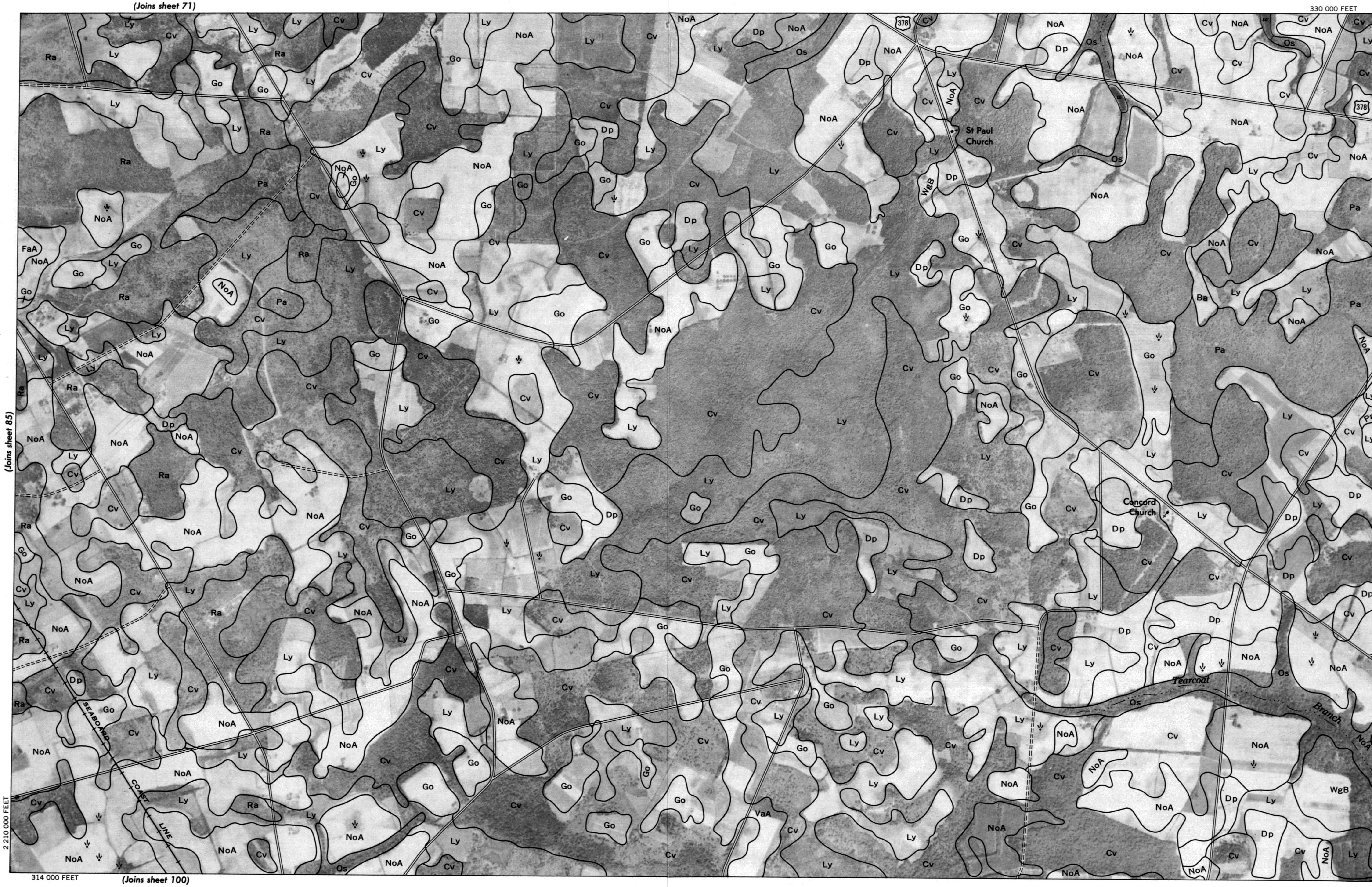
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 85

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 86



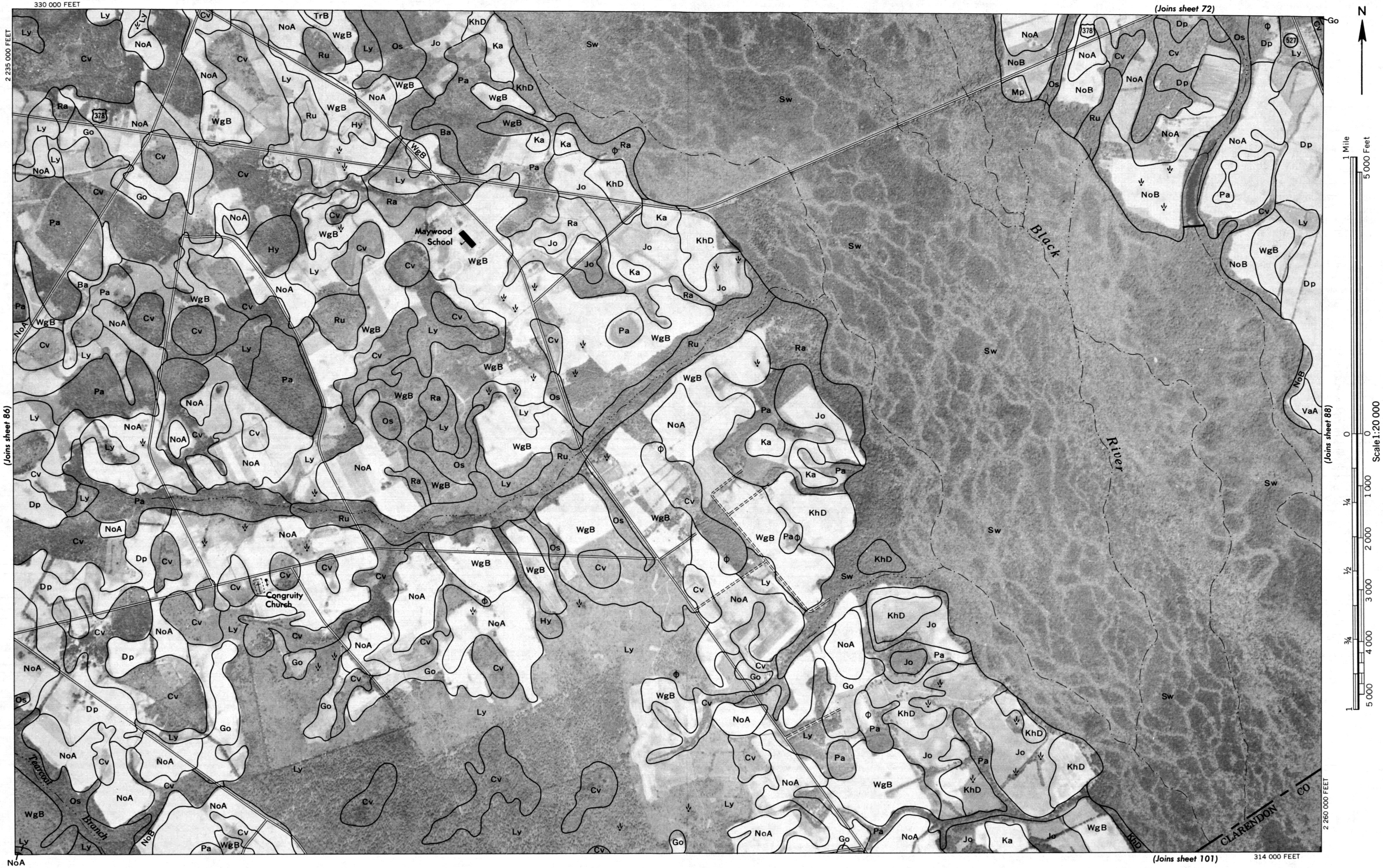


This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 86

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

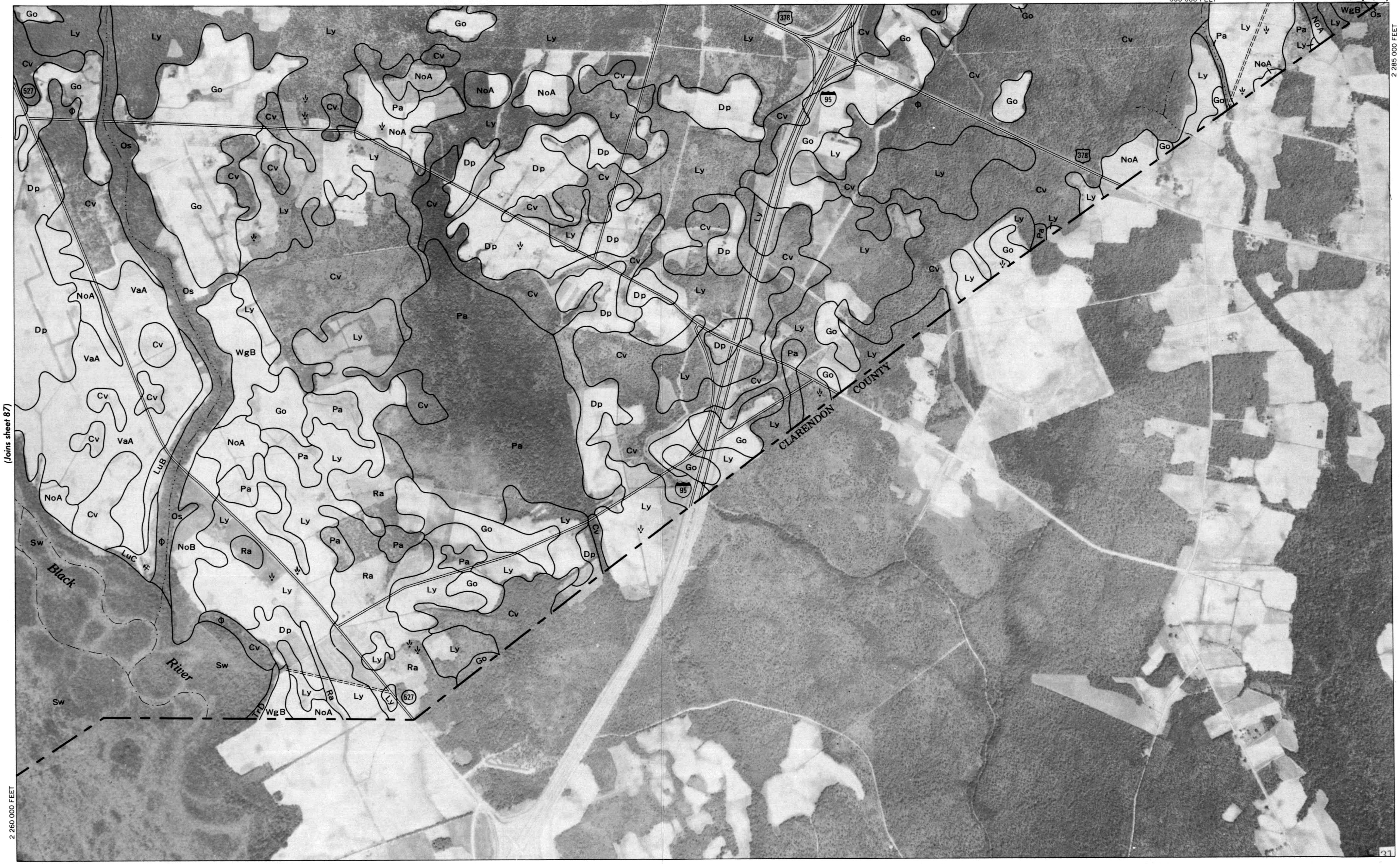
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 88

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

(Joins sheet 87)

330 000 FEET
(Joins sheet 73) | (74)
2 285 000 FEET



2 260 000 FEET
314 000 FEET

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 88

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 89

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 90

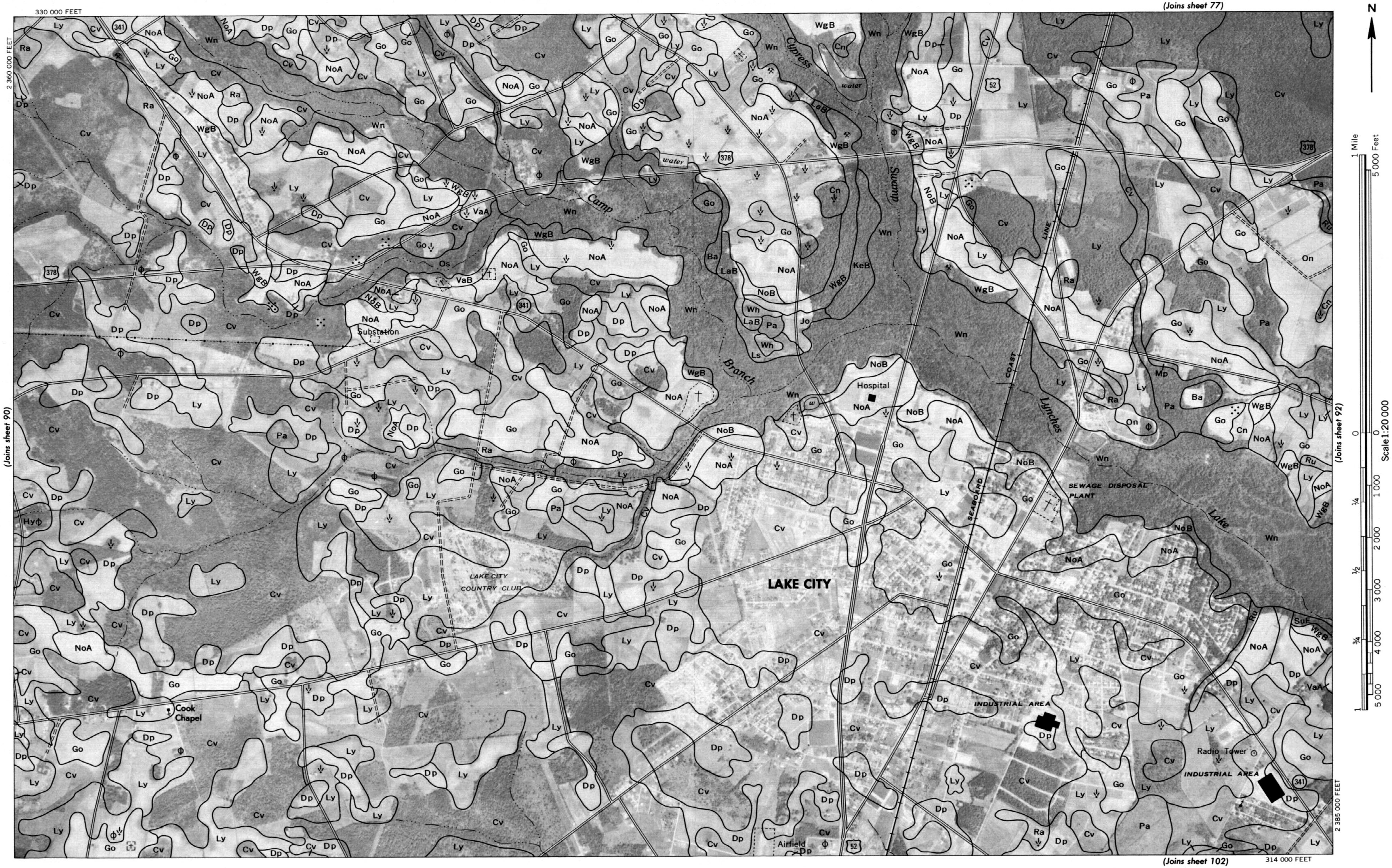
N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 90

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 91

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

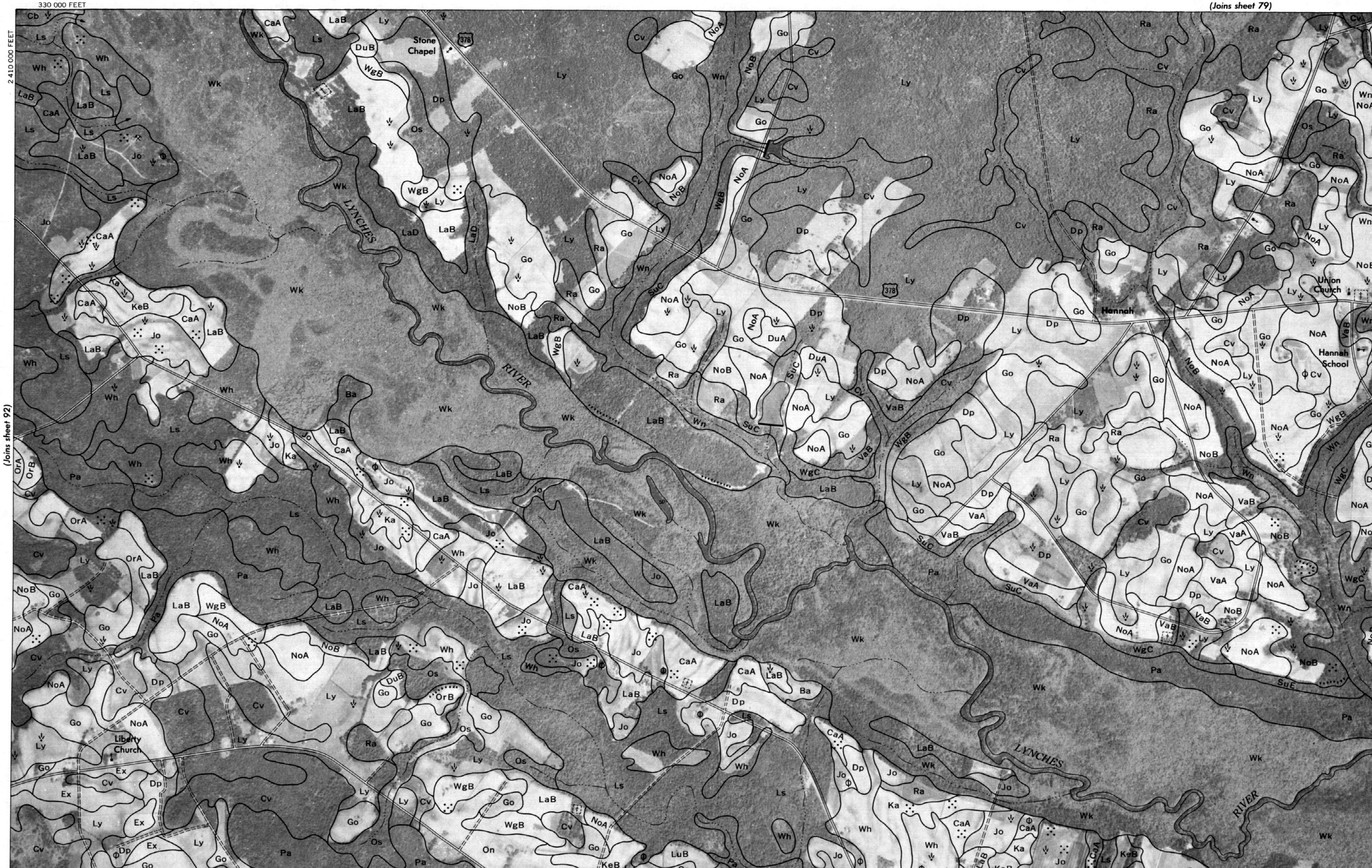
This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 92

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 93

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.



N

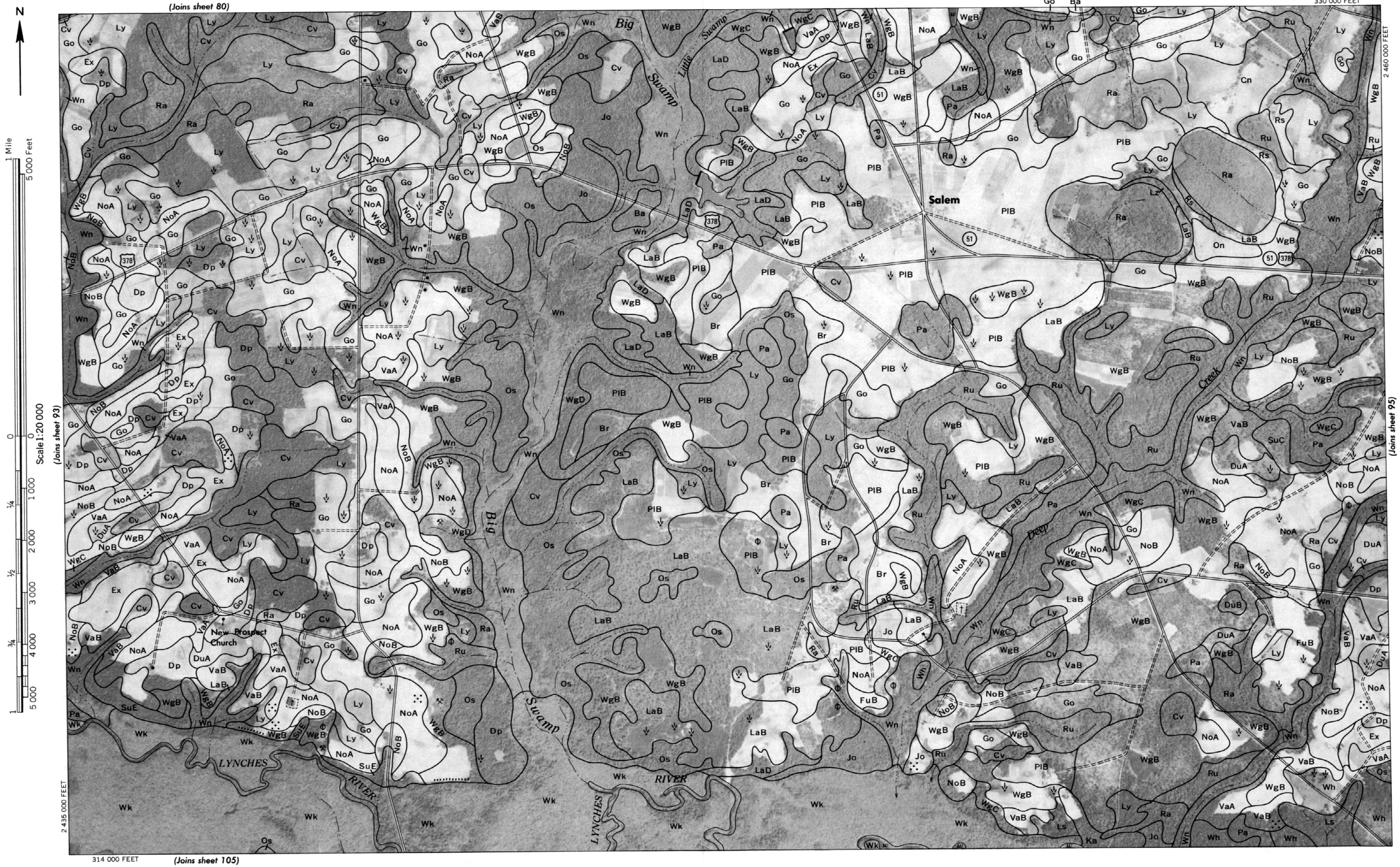
Scale 1:20 000

1 Mile ¾ ½ ¼ 0

5 000 Feet 4 000 3 000 2 000 1 000 0

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 94



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

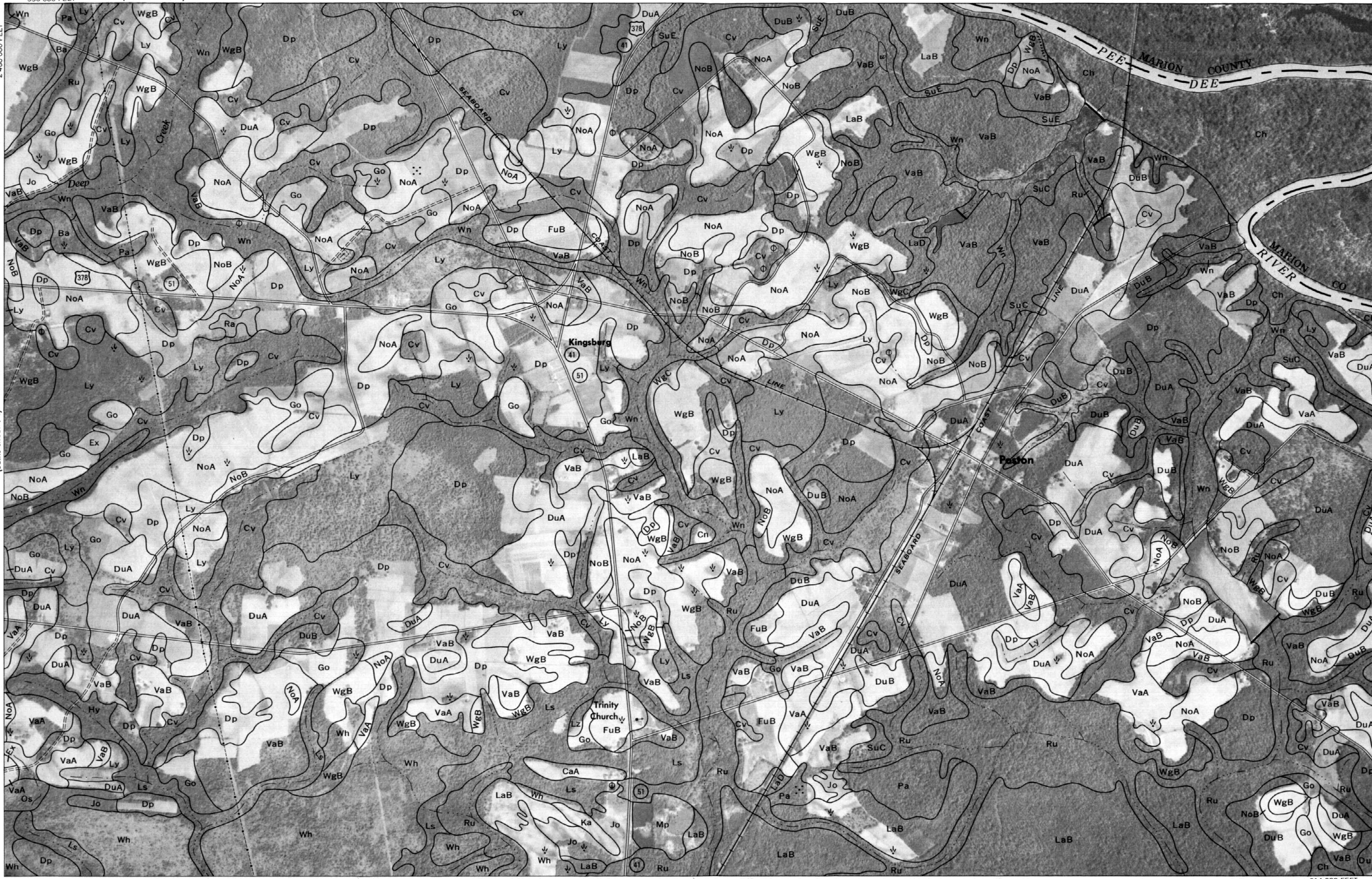
FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 94

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

330 000 FEET (Joins sheet 81)

2 460 000 FEET

(Joins sheet 94)



(Joins inset A, sheet 81)

(Joins inset B, sheet 81)

N

1 Mile
5 000 Feet
Scale 1:20 000

2 485 000 FEET

(Joins sheet 106)

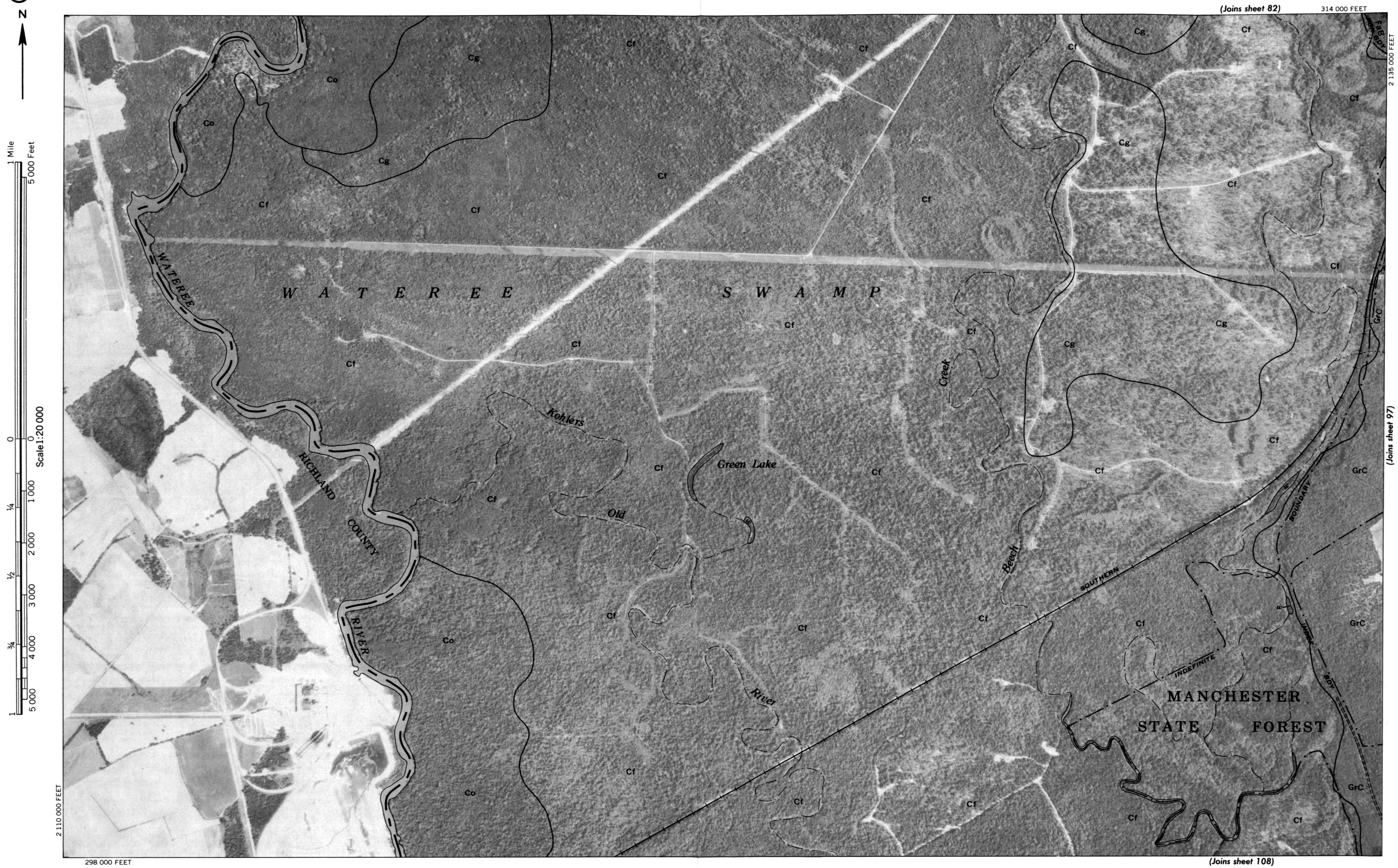
314 000 FEET

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 95

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 96



FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 96

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 97

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA — SHEET NUMBER 98

N

1 Mile
5 000 Feet
Scale 1:20 000
0 ¼ ½ ¾ 1
0 1 000 2 000 3 000 4 000 5 000

(Joins sheet 84)

(Joins sheet 97)

(Joins sheet 99)

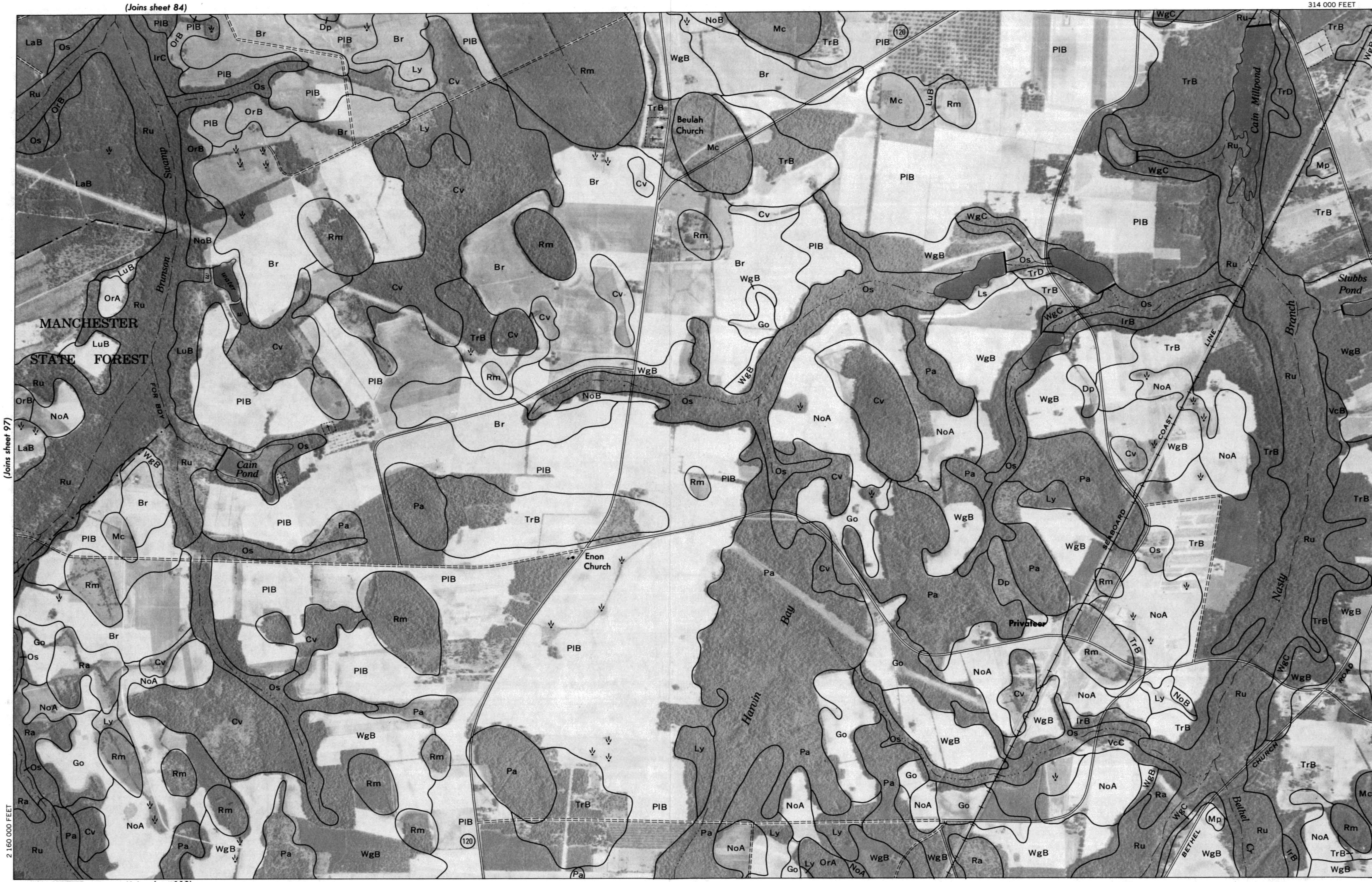
(Joins sheet 110)

314 000 FEET

2 185 000 FEET

2 160 000 FEET

298 000 FEET



This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.

FLORENCE AND SUMTER COUNTIES, SOUTH CAROLINA NO. 99

This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the South Carolina Agricultural Experiment Station.

Photobase from 1970 aerial photography. Positions of grid lines are approximate and based on the South Carolina coordinate system, north zone.